

Under the Dome

A film by Chai Jing

Close captions

1 hr 43 min

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and the Global Environmental Justice Documentaries project

1

00:00:04.059 --> 00:00:07.240

This is a graph showing Beijing's PM 2.5 levels during January 2013.

2

00:00:07.240 --> 00:00:09.960

There were 25 days with smog.

3

00:00:09.960 --> 00:00:11.460

I was in Beijing at the time.

4

00:00:11.460 --> 00:00:13.839

Looking over this graph again and again,

5

00:00:13.839 --> 00:00:15.960

I try to recall the feelings and impressions I had at that time.

6

00:00:16.960 --> 00:00:18.239

But I can't remember.

7

00:00:18.239 --> 00:00:18.879

At that time,

8

00:00:18.879 --> 00:00:23.000

everyone said the smog was caused by random weather.

9

00:00:23.000 --> 00:00:24.300

They didn't take it seriously.

10

00:00:24.559 --> 00:00:26.399

That month I went away on business to 4 places:

11

00:00:30.600 --> 00:00:32.640

Later, when I looked back at video of the sky

12
00:00:32.640 --> 00:00:36.679
at the time smog enveloped 25 provinces

13
00:00:36.679 --> 00:00:37.960
affecting 600 million people.

14
00:00:37.960 --> 00:00:39.920
But I was completely unaware.

15
00:00:40.799 --> 00:00:42.640
Only my throat was affected.

16
00:00:42.640 --> 00:00:44.960
One night in Xian, I couldn't sleep because of a cough

17
00:00:44.960 --> 00:00:47.880
so I cut up a lemon and placed it next to my pillow.

18
00:00:48.640 --> 00:00:50.000
After returning to Beijing,

19
00:00:50.000 --> 00:00:51.679
I found out I was pregnant.

20
00:00:52.920 --> 00:00:54.759
This is the first time I saw my daughter.

21
00:00:55.759 --> 00:00:57.479
I knew it was going to be a little girl

22
00:00:57.479 --> 00:00:59.960
because of her hairstyle.

23
00:01:01.439 --> 00:01:03.039
The moment I heard her heartbeat,

24
00:01:03.039 --> 00:01:06.480
my only hope was for her to be healthy.

25

00:01:07.680 --> 00:01:09.599
However,

26
00:01:10.439 --> 00:01:11.920
they found a benign tumor

27
00:01:12.120 --> 00:01:14.560
and my daughter needed surgery after her birth.

28
00:01:15.159 --> 00:01:16.879
Before giving her the anesthesia,

29
00:01:16.879 --> 00:01:18.239
the doctor told me

30
00:01:18.239 --> 00:01:20.359
there was a possibility

31
00:01:20.400 --> 00:01:21.799
she'd never come out of the operation.

32
00:01:22.799 --> 00:01:24.640
You need to prepare yourself for the worst.

33
00:01:26.319 --> 00:01:28.319
I didn't even have time to hug her

34
00:01:28.319 --> 00:01:30.519
before she was taken away.

35
00:01:31.359 --> 00:01:34.760
Afterwards, a nurse gave me this little teddy bear.

36
00:01:34.760 --> 00:01:37.120
Of course it was meant to comfort my baby,

37
00:01:37.120 --> 00:01:39.159
but it comforted me instead.

38
00:01:39.439 --> 00:01:40.519
The next time I saw my daughter,

39

00:01:40.519 --> 00:01:42.040

she was unconscious.

40

00:01:42.040 --> 00:01:43.879

The doctor told me

41

00:01:43.879 --> 00:01:45.519

the surgery was successful,

42

00:01:45.519 --> 00:01:47.840

but you need to forgive me for one thing.

43

00:01:47.840 --> 00:01:49.680

He said my daughter was so fat

44

00:01:49.719 --> 00:01:50.799

that when she was given anesthesia

45

00:01:50.799 --> 00:01:53.519

they had to prick her many times to find a vein.

46

00:01:56.120 --> 00:01:59.319

I took her little hand and placed it on my face.

47

00:01:59.319 --> 00:02:01.480

I called out her name

48

00:02:01.480 --> 00:02:03.680

until she opened her eyes and looked at me.

49

00:02:06.000 --> 00:02:08.120

I'm an incredibly lucky person.

50

00:02:08.800 --> 00:02:12.639

Afterwards, I quit my job to be
with her and take care of her.

51

00:02:12.639 --> 00:02:14.439

As long as family can be
together in peace and in health,

52

00:02:14.439 --> 00:02:15.439
everything will be fine.

53

00:02:16.800 --> 00:02:17.599
But...

54

00:02:18.960 --> 00:02:19.719
on the way home

55

00:02:19.719 --> 00:02:21.319
I already started to feel afraid.

56

00:02:21.319 --> 00:02:23.840
The smell of smoke was everywhere.

57

00:02:23.840 --> 00:02:25.840
I took a handkerchief and covered her nose.

58

00:02:25.840 --> 00:02:29.080
It was so stupid because she struggled
and breathed in even more.

59

00:02:30.240 --> 00:02:31.960
I had never felt afraid of pollution before.

60

00:02:32.900 --> 00:02:35.300
I had never worn a mask anywhere.

61

00:02:35.300 --> 00:02:38.620
But now I was holding life in my very arms.

62

00:02:38.620 --> 00:02:41.460
Breathing, eating, drinking,
I was responsible for everything.

63

00:02:41.460 --> 00:02:43.180
That would make you feel afraid.

64

00:02:43.180 --> 00:02:45.379
The smog that blanketed us for

almost two months at the end of 2013

65

00:02:45.379 --> 00:02:47.379

made me realize that this wasn't a random occurrence

66

00:02:47.379 --> 00:02:49.219

and wouldn't pass quickly.

67

00:02:49.860 --> 00:02:53.939

This is the sky I saw living in Shanxi ten years ago.

68

00:03:04.719 --> 00:03:06.280

Is every day like this?

69

00:03:06.280 --> 00:03:08.199

Yes, every single day.

70

00:03:08.199 --> 00:03:10.919

Not just for one or two days,
but continuously for three years.

71

00:03:11.719 --> 00:03:14.159

Benzopyrene is a highly carcinogenic substance.

72

00:03:14.159 --> 00:03:16.560

After a long time, it'll collect inside the body.

73

00:03:16.560 --> 00:03:17.879

And if it collects to a certain degree

74

00:03:17.879 --> 00:03:19.439

there's a risk of it causing cancer.

75

00:03:20.319 --> 00:03:23.319

76

00:03:23.520 --> 00:03:25.159

Do you still think this is a river?

77

00:03:25.159 --> 00:03:26.639

No, this is sewage.

78

00:03:26.639 --> 00:03:27.639

The data shows

79

00:03:27.639 --> 00:03:31.360

benzopyrene's annual average
concentration is 209 times the limit.

80

00:03:34.719 --> 00:03:36.439

Those trees are all dead.

81

00:03:36.439 --> 00:03:38.360

Look at those two in the crevice.

82

00:03:46.479 --> 00:03:48.360

Have you ever seen the stars?

83

00:03:48.879 --> 00:03:50.639

No.

84

00:03:51.199 --> 00:03:53.400

Have you ever seen the blue sky?

85

00:03:53.400 --> 00:03:55.520

A little bit.

86

00:03:55.520 --> 00:03:57.879

How about white clouds?

87

00:03:57.879 --> 00:04:00.000

No.

88

00:04:02.759 --> 00:04:06.159

In 2004 when I was interviewing
this 6 year old little girl,

89

00:04:06.159 --> 00:04:09.319

I never expected that my daughter

90

00:04:09.319 --> 00:04:12.319

might be faced with the world she had described.

91

00:04:14.080 --> 00:04:17.519

This is the entire year of 2014 in Beijing.

92

00:04:17.519 --> 00:04:18.800

I only brought my daughter outside

93

00:04:18.800 --> 00:04:20.360

on days with excellent or good air quality.

94

00:04:20.360 --> 00:04:22.240

But how many days were like that?

95

00:04:24.040 --> 00:04:25.720

There were 175 polluted days.

96

00:04:25.720 --> 00:04:28.240

That meant that for almost half the year

97

00:04:28.240 --> 00:04:30.160

I had no choice but to keep my daughter inside

98

00:04:30.160 --> 00:04:31.399

like a prisoner.

99

00:04:31.399 --> 00:04:33.480

Ten years ago, that environmental protection agency told me

100

00:04:33.480 --> 00:04:35.319

"Xiaoyi County is just a reflection of Shanxi Province,

101

00:04:35.319 --> 00:04:37.319

and Shanxi is just a reflection of China."

102

00:04:37.319 --> 00:04:38.800

In ten short years,

103

00:04:38.800 --> 00:04:40.839

I've watched on helplessly as

that statement became reality.

104

00:04:41.740 --> 00:04:43.740

March 4, 2014

105

00:04:44.439 --> 00:04:47.680

46 Photographers

106

00:04:47.680 --> 00:04:51.759

40 Consecutive Days of Photographs

107

00:04:52.319 --> 00:04:58.120

Tianjin - 197 Polluted Days in 2014

108

00:04:58.120 --> 00:05:04.040

Shenyang - 152 Polluted Days in 2014

109

00:05:04.040 --> 00:05:07.439

Chengdu - 125 Polluted Days in 2014

110

00:05:07.439 --> 00:05:10.399

Lanzhou - 112 Polluted Days in 2014

111

00:05:10.399 --> 00:05:16.279

Shijiazhuang - 264 Polluted Days in 2014

112

00:05:21.120 --> 00:05:24.160

I once saw a television show called "Under The Dome".

113

00:05:24.160 --> 00:05:28.519

It tells the story of a small town
suddenly trapped under a dome

114

00:05:28.519 --> 00:05:30.600

and cut off from the outside world.

115

00:05:30.600 --> 00:05:33.040

But one day I discovered this is actually our reality.

116

00:05:33.920 --> 00:05:36.279

Sometimes when I wake up

in the morning, I see my daughter

117

00:05:36.279 --> 00:05:38.399

standing in front of the balcony tapping on the glass.

118

00:05:38.399 --> 00:05:40.839

This is how she tells me she wants to go outside.

119

00:05:41.160 --> 00:05:42.360

There will come a day when she asks,

120

00:05:43.079 --> 00:05:45.160

"Mommy, why can't you let me go outside?"

121

00:05:45.480 --> 00:05:46.399

"What exactly is out there?"

122

00:05:46.439 --> 00:05:47.600

"Will it hurt me?"

123

00:05:48.279 --> 00:05:50.439

Everything I did this year

124

00:05:50.439 --> 00:05:52.759

was to answer these questions

she'll ask me in the future.

125

00:05:52.759 --> 00:05:54.399

"What is smog?"

126

00:05:54.399 --> 00:05:55.800

"Where does it come from?"

127

00:05:55.800 --> 00:05:57.160

"What do we do about it?"

128

00:05:57.160 --> 00:05:58.079

So what is smog?

129

00:06:01.699 --> 00:06:02.939

Sometimes, I'll turn off the lights.

130

00:06:04.120 --> 00:06:05.040

I just want to take a look.

131

00:06:05.319 --> 00:06:07.319

I know those PM2.5 particles are out there.

132

00:06:08.439 --> 00:06:11.519

They're airborne particles with a diameter of 2.5 microns.

133

00:06:12.560 --> 00:06:15.199

They have the ability to be refracted by large amounts of visible light

134

00:06:15.199 --> 00:06:18.000

and leave us in a world of poor visibility.

135

00:06:18.000 --> 00:06:20.160

But I can't see them

136

00:06:20.160 --> 00:06:23.959

because the naked eye can only see micro-particles 20 times their size.

137

00:06:23.959 --> 00:06:26.439

in other words this is a war against an invisible enemy.

138

00:06:27.560 --> 00:06:30.480

There is only one method to see them.

139

00:06:30.480 --> 00:06:31.279

This.

140

00:06:32.060 --> 00:06:33.279

This is a PM2.5 sampling pump.

141

00:06:34.199 --> 00:06:37.199

I can take a perfectly clean sampling cassette, put it inside,

142
00:06:37.199 --> 00:06:39.279
and carry the pump on my back for 24 hours.

143
00:06:40.399 --> 00:06:45.399
Air Quality Index (AQI): 282
November 26, 2014

144
00:06:47.839 --> 00:06:50.240
This is what the cassette looked like at first.

145
00:06:50.240 --> 00:06:51.660
After 24 hours,

146
00:06:51.660 --> 00:06:52.579
it looked like this.

147
00:06:53.139 --> 00:06:57.860
If I don't protect my child,
she'll breathe in all of that.

148
00:06:57.860 --> 00:06:58.899
So how much is that?

149
00:07:00.220 --> 00:07:02.740
305.91 micrograms per cubic meter.

150
00:07:02.740 --> 00:07:05.139
Who actually understands this number?

151
00:07:05.139 --> 00:07:06.060
Let's do a comparison.

152
00:07:06.060 --> 00:07:08.100
This is the World Health Organization's standard.

153
00:07:08.100 --> 00:07:09.740
This is America.

154
00:07:09.740 --> 00:07:11.300
This is Europe.

155

00:07:11.300 --> 00:07:13.060

This is China.

156

00:07:13.060 --> 00:07:15.579

So how much did we breathe in that day?

157

00:07:16.220 --> 00:07:18.579

Almost 5 times China's average.

158

00:07:19.139 --> 00:07:22.019

But this is nothing more than a shocking number.

159

00:07:22.019 --> 00:07:25.019

I really wanted to know exactly what substances are in that sampling cassette.

160

00:07:25.019 --> 00:07:28.819

I asked Dr. Qiu Xinghua of Peking University to perform a test on it.

161

00:07:28.819 --> 00:07:30.220

This is what he found.

162

00:07:30.220 --> 00:07:32.579

There are 15 carcinogens including

163

00:07:32.579 --> 00:07:35.860

one of the world's most harmful, benzo[a]pyrene.

164

00:07:35.860 --> 00:07:37.220

How many times over the national average?

165

00:07:38.620 --> 00:07:40.660

14 times.

166

00:07:40.660 --> 00:07:43.259

I don't really believe this number because do you remember?

167

00:07:43.259 --> 00:07:45.740

When I was standing between four

or five coking plants in Xiaoyi County

168

00:07:45.740 --> 00:07:47.939
in the clip I just showed,

169

00:07:47.939 --> 00:07:50.540
I was breathing in more than 9 times
the normal amount of benzopyrene.

170

00:07:50.540 --> 00:07:52.579
Now I'm in the middle of a large international city.

171

00:07:52.579 --> 00:07:55.420
I don't see any factories with smokestacks.

172

00:07:55.420 --> 00:07:58.259
How is it possible it's 14 times over the norm?

173

00:07:58.259 --> 00:07:59.740
Dr. Qiu also had his suspicions.

174

00:07:59.740 --> 00:08:00.980
He said it was unlikely the level was this high.

175

00:08:00.980 --> 00:08:02.339
He'd calculate it again.

176

00:08:03.019 --> 00:08:05.459
He called me the next day and told me
that my number wasn't wrong.

177

00:08:06.220 --> 00:08:09.500
Most of the results were even higher than mine,
more than 20 times the norm.

178

00:08:10.660 --> 00:08:13.259
All of the carcinogens adhere to what you just saw,

179

00:08:13.259 --> 00:08:14.980
the black surface of that sampling cassette.

180

00:08:14.980 --> 00:08:17.939
It is called carbon black and it is very small,

181
00:08:17.939 --> 00:08:19.540
only 0.2 microns.

182
00:08:19.540 --> 00:08:20.939
But it has a chain-like structure

183
00:08:20.939 --> 00:08:22.699
so if it unfolds,

184
00:08:22.699 --> 00:08:26.779
two grams of carbon black could
cover an entire basketball court.

185
00:08:26.779 --> 00:08:30.420
Therefore, it can absorb many
carcinogens and heavy metals.

186
00:08:30.420 --> 00:08:33.740
How much carbon black is there in China?

187
00:08:33.740 --> 00:08:34.980
In 2009,

188
00:08:34.980 --> 00:08:37.299
NASA took a measurement.

189
00:08:39.940 --> 00:08:43.059
That pale purplish area is China.

190
00:08:43.059 --> 00:08:45.460
The carbon black is like a ghost hovering overhead.

191
00:08:47.539 --> 00:08:49.259
I went to Peking University

192
00:08:49.259 --> 00:08:51.059
where I knew they had a experiment chamber.

193

00:08:51.059 --> 00:08:55.740
I asked if I could volunteer myself to be put inside

194
00:08:55.740 --> 00:08:57.299
to see my body's reaction.

195
00:08:57.340 --> 00:08:59.100
That way I could tell everyone what I found out.

196
00:08:59.100 --> 00:09:01.139
The man in charge hesitated and told me,

197
00:09:01.139 --> 00:09:03.419
he was sorry, they couldn't do the experiment.

198
00:09:03.419 --> 00:09:04.860
I asked why not.

199
00:09:04.860 --> 00:09:08.700
He said because every experiment
needed to abide by a code of ethics.

200
00:09:08.700 --> 00:09:12.940
The code has to guarantee the subject won't be harmed.

201
00:09:12.940 --> 00:09:19.779
But what if the being outside in the air pollution was
more harmful than being inside that chamber?

202
00:09:19.779 --> 00:09:21.279
To put it another way,

203
00:09:21.279 --> 00:09:27.100
each one of us lives our entire life in
an open experimental chamber.

204
00:09:27.100 --> 00:09:29.100
And what will be the result of this experiment?

205
00:09:29.100 --> 00:09:31.580
Peking University thought up a different experiment.

206

00:09:31.580 --> 00:09:36.220

For one year, they would directly test how subjects' bodies react to the pollution in their daily lives.

207

00:09:36.220 --> 00:09:38.259

I also joined the experiment.

208

00:09:38.299 --> 00:09:39.659

Here are my results.

209

00:09:39.659 --> 00:09:42.580

I am in the population most at risk for respiratory inflammation.

210

00:09:42.580 --> 00:09:45.220

Fine particulate matter can affect the respiratory system

211

00:09:45.220 --> 00:09:48.179

and can also influence the cardiovascular system.

212

00:09:48.179 --> 00:09:51.299

Exposure to excess particulate matter can decrease the heart's ability to supply blood.

213

00:09:51.299 --> 00:09:52.620

I have trouble getting through that part

214

00:09:52.620 --> 00:09:54.419

because I don't understand what it means.

215

00:09:54.419 --> 00:09:56.340

So with the help of a scientist,

216

00:09:56.340 --> 00:09:58.419

we could transform those sentences into an animation.

217

00:09:59.179 --> 00:10:01.179

I am PM2.5.

218

00:10:01.179 --> 00:10:03.279

I have many brothers.

219

00:10:03.279 --> 00:10:06.539
Polycyclic aromatic hydrocarbons,
every kind of heavy metal...

220

00:10:06.539 --> 00:10:08.799
Everyone has a weapon.

221

00:10:10.159 --> 00:10:13.200
In this video game where we attack humans,

222

00:10:14.080 --> 00:10:15.440
we never lose.

223

00:10:16.320 --> 00:10:17.559
Stage #1

224

00:10:17.559 --> 00:10:18.200
The Nostril

225

00:10:18.600 --> 00:10:21.720
Your nasal hair and mucus can keep out foreign bodies.

226

00:10:21.720 --> 00:10:23.940
90% of micro-particles with diameters

227

00:10:23.940 --> 00:10:27.000
greater than 10 microns die here.

228

00:10:27.000 --> 00:10:28.039
But they can't stop me.

229

00:10:28.799 --> 00:10:29.519
Stage #2

230

00:10:29.519 --> 00:10:30.399
The Throat

231

00:10:31.700 --> 00:10:33.419
Cilium of the upper respiratory tract

232

00:10:33.419 --> 00:10:35.620

destroy larger particulate matter in a flash.

233

00:10:35.620 --> 00:10:36.899

But my body is slim and graceful.

234

00:10:36.899 --> 00:10:39.580

Your trachea involuntarily contracts

235

00:10:39.580 --> 00:10:40.820

trying to stop me.

236

00:10:40.820 --> 00:10:42.620

How embarrassing!

237

00:10:42.620 --> 00:10:43.460

Stage #3

238

00:10:43.460 --> 00:10:44.679

The Lower Respiratory Tract

239

00:10:44.820 --> 00:10:47.460

It's like a tree growing upside down in here.

240

00:10:47.460 --> 00:10:50.259

We zoom through the bronchial tubes
like it's a downhill course.

241

00:10:50.259 --> 00:10:52.220

DO NOT TRY AT HOME!

242

00:10:53.480 --> 00:10:57.679

All along the way, we fight hand to hand with white
blood cells and lymphocytes in a free-for-all.

243

00:10:57.679 --> 00:11:00.840

inciting every imaginable type of inflammation.

244

00:11:01.440 --> 00:11:06.559

Most of our squad eventually

reach the pulmonary alveolus.

245

00:11:07.480 --> 00:11:10.080
You have more than 300 million of them.

246

00:11:10.080 --> 00:11:12.879
Once we get in there,

247

00:11:12.879 --> 00:11:14.960
it's impossible to catch your breath.

248

00:11:14.960 --> 00:11:17.960
But here we meet the macrophages,
our most powerful adversaries.

249

00:11:18.960 --> 00:11:23.279
They love to gobble us up and are known
as the body's street sweepers.

250

00:11:23.639 --> 00:11:25.600
It's an all out battle!

251

00:11:36.299 --> 00:11:42.639
But we're too many and we're protected
by the toxins of the heavy metals.

252

00:11:42.820 --> 00:11:45.139
The macrophages can't digest us

253

00:11:45.139 --> 00:11:47.519
and are easily defeated.

254

00:11:48.019 --> 00:11:50.399
This is how we destroy your immunity.

255

00:11:50.620 --> 00:11:51.539
GAME, SET, MATCH!

256

00:11:51.700 --> 00:11:56.059
We have another group of warriors
smaller than 0.5 microns in diameter.

257

00:11:56.059 --> 00:11:58.860

They can pass through the membrane of the pulmonary alveolus and plant themselves into the bloodstream,

258

00:11:58.860 --> 00:12:01.059

causing damage to the blood vessel's inner membrane.

259

00:12:01.059 --> 00:12:05.620

The vessel narrows causing high blood pressure and blood clots.

260

00:12:06.700 --> 00:12:12.639

We can even pass through your circulatory system until we arrive at its most vital organ,

261

00:12:13.039 --> 00:12:15.960

and launch an offensive against your heart.

262

00:12:15.960 --> 00:12:19.240

We can cause coronary disease, an irregular heartbeat and finally...

263

00:12:19.240 --> 00:12:20.960

a heart attack!

264

00:12:22.960 --> 00:12:25.200

Tremble humans...

265

00:12:25.440 --> 00:12:27.480

For I am in...

266

00:12:27.799 --> 00:12:28.799

Your every breath!

267

00:12:32.919 --> 00:12:35.960

These are measurements given to me by the Chinese Academy of Sciences.

268

00:12:35.960 --> 00:12:37.480

This complex diagram shows

269

00:12:37.480 --> 00:12:42.059
that the mortality rate rises
along with the PM2.5 value.

270
00:12:42.059 --> 00:12:44.700
Many scientific institutions
have found this same trend.

271
00:12:44.700 --> 00:12:49.139
I saw Chen Zhu's calculations,
the Ex Minister of Health.

272
00:12:49.139 --> 00:12:52.379
They show the number of premature deaths in China

273
00:12:52.379 --> 00:12:54.159
due to air pollution is...

274
00:12:56.860 --> 00:12:58.580
In this war against humanity,

275
00:12:58.580 --> 00:13:01.679
the weakest and most susceptible
to injury are on the front lines,

276
00:13:01.679 --> 00:13:03.440
our children and our parents.

277
00:13:03.779 --> 00:13:05.980
Most of these children are only 2 months old.

278
00:13:05.980 --> 00:13:08.019
They've never been outside,

279
00:13:08.019 --> 00:13:09.580
but they already have pneumonia.

280
00:13:09.580 --> 00:13:11.460
They are receiving a treatment called atomization.

281
00:13:11.460 --> 00:13:13.659
Their parents allowed me to photograph them.

282

00:13:13.659 --> 00:13:16.779

They couldn't believe their babies became sick from not wearing any protection during heavily polluted days.

283

00:13:16.779 --> 00:13:18.340

But the doctor told them

284

00:13:18.340 --> 00:13:21.700

he couldn't diagnose them for any known reasons

285

00:13:21.700 --> 00:13:24.460

because they still didn't have enough scientific proof it was caused by pollution.

286

00:13:24.460 --> 00:13:26.340

But I can tell you the data.

287

00:13:26.340 --> 00:13:28.779

In January 2013

288

00:13:28.779 --> 00:13:30.860

during a seriously polluted period,

289

00:13:30.860 --> 00:13:32.539

the number of emergency calls

290

00:13:32.539 --> 00:13:34.539

in 27 cities across China

291

00:13:34.539 --> 00:13:38.779

grew at an explosive rate.

292

00:13:38.779 --> 00:13:42.139

Sometimes the mothers in my neighborhood will chat about this.

293

00:13:42.139 --> 00:13:45.659

One mother asked me how to deal with the smog.

294

00:13:45.659 --> 00:13:48.179

Should we have our children exposed
to the pollution as early as possible,

295

00:13:48.179 --> 00:13:50.740
have them exercise and adapt to it?

296

00:13:50.740 --> 00:13:53.500
Why should our children lag behind?

297

00:13:53.500 --> 00:13:55.740
Edward Larence Avol, an expert in
clinical preventive medicine

298

00:13:55.740 --> 00:13:57.740
from the once severely polluted city of Los Angeles,

299

00:13:57.740 --> 00:14:00.179
tells us if children have the ability to adapt

300

00:14:00.179 --> 00:14:01.659
if they are exposed to severe pollution.

301

00:14:25.580 --> 00:14:25.620
"Lung Capacity Diminishes"

302

00:14:25.620 --> 00:14:26.059
"Notable Impact"
"Lung Capacity Diminishes"

303

00:14:26.059 --> 00:14:26.220
"Bronchitis"
"Notable Impact"
"Lung Capacity Diminishes"

304

00:14:26.220 --> 00:14:26.419
"Air Pollution"
"Bronchitis"
"Notable Impact"
"Lung Capacity Diminishes"

305

00:14:26.419 --> 00:14:26.659
"Respiratory System Health"
"Air Pollution"

"Bronchitis"
"Notable Impact"
"Lung Capacity Diminishes"

306
00:14:26.659 --> 00:14:26.899
"Pneumoconiosis"
"Respiratory System Health"
"Air Pollution"
"Bronchitis"
"Notable Impact"
"Lung Capacity Diminishes"

307
00:14:26.899 --> 00:14:27.100
"Potentially Effect"
"Pneumoconiosis"
"Respiratory System Health"
"Air Pollution"
"Bronchitis"
"Notable Impact"
"Lung Capacity Diminishes"

308
00:14:27.100 --> 00:14:27.340
"Lung Capacity Data"
"Potentially Effect"
"Pneumoconiosis"
"Respiratory System Health"
"Air Pollution"
"Bronchitis"
"Notable Impact"
"Lung Capacity Diminishes"

309
00:14:27.340 --> 00:14:27.580
"Respiratory Tract"
"Lung Capacity Data"
"Potentially Effect"
"Pneumoconiosis"
"Respiratory System Health"
"Air Pollution"
"Bronchitis"
"Notable Impact"
"Lung Capacity Diminishes"

310
00:14:27.580 --> 00:14:27.779
"Rickets"
"Respiratory Tract"
"Lung Capacity Data"
"Potentially Effect"
"Pneumoconiosis"
"Respiratory System Health"

"Air Pollution"
"Bronchitis"
"Notable Impact"
"Lung Capacity Diminishes"

311

00:14:27.779 --> 00:14:28.019

"Death Rate"
"Rickets"
"Respiratory Tract"
"Lung Capacity Data"
"Potentially Effect"
"Pneumoconiosis"
"Respiratory System Health"
"Air Pollution"
"Bronchitis"
"Notable Impact"
"Lung Capacity Diminishes"

312

00:14:28.019 --> 00:14:28.259

"Lung Capacity Decreases"
"Death Rate"
"Rickets"
"Respiratory Tract"
"Lung Capacity Data"
"Potentially Effect"
"Pneumoconiosis"
"Respiratory System Health"
"Air Pollution"
"Bronchitis"
"Notable Impact"
"Lung Capacity Diminishes"

313

00:14:28.259 --> 00:14:28.500

"Cellular Immunity Ability"
"Lung Capacity Decreases"
"Death Rate"
"Rickets"
"Respiratory Tract"
"Lung Capacity Data"
"Potentially Effect"
"Pneumoconiosis"
"Respiratory System Health"
"Air Pollution"
"Bronchitis"
"Notable Impact"
"Lung Capacity Diminishes"

314

00:14:28.500 --> 00:14:28.700

"Oxygen Depletion"
"Cellular Immunity Ability"

"Lung Capacity Decreases"
"Death Rate"
"Rickets"
"Respiratory Tract"
"Lung Capacity Data"
"Potentially Effect"
"Pneumoconiosis"
"Respiratory System Health"
"Air Pollution"
"Bronchitis"
"Notable Impact"
"Lung Capacity Diminishes"

315

00:14:28.700 --> 00:14:31.120

"Cellular Immunity Ability"
"Oxygen Depletion"
"Cellular Immunity Ability"
"Lung Capacity Decreases"
"Death Rate"
"Rickets"
"Respiratory Tract"
"Lung Capacity Data"
"Potentially Effect"
"Pneumoconiosis"
"Respiratory System Health"
"Air Pollution"
"Bronchitis"
"Notable Impact"
"Lung Capacity Diminishes"

316

00:14:43.539 --> 00:14:47.139

This is downstairs from my home
during a smoggy day a few days ago.

317

00:14:47.139 --> 00:14:49.820

That day's Air Quality Index (AQI)
had already exceeded 500,

318

00:14:50.620 --> 00:14:52.220

considered severe pollution.

319

00:14:52.220 --> 00:14:56.659

but the primary school students are still playing
basketball, running, or having fun.

320

00:14:56.659 --> 00:14:57.779

During physical activity,

321

00:14:57.779 --> 00:15:00.419
we breathe in five to ten times
more air than during rest.

322

00:15:00.419 --> 00:15:01.940
As I was watching them, I realized

323

00:15:01.940 --> 00:15:03.940
it would be impossible to always protect my child.

324

00:15:03.940 --> 00:15:06.019
One day she'd have to join society.

325

00:15:06.019 --> 00:15:08.980
Breathing isn't a choice and
there's no way to escape it.

326

00:15:08.980 --> 00:15:10.980
Every breath you take is polluted.

327

00:15:10.980 --> 00:15:12.299
Adults like us

328

00:15:12.299 --> 00:15:14.940
need to breathe about 25,000 times per day.

329

00:15:14.940 --> 00:15:16.980
Over a long period of time,

330

00:15:16.980 --> 00:15:19.220
what does this stuff look like in our lungs?

331

00:15:19.220 --> 00:15:21.059
We are very grateful to a patient and doctor

332

00:15:21.059 --> 00:15:22.779
from Beijing Cancer Hospital

333

00:15:22.779 --> 00:15:25.019
who allowed us to video record this surgery.

334

00:15:25.019 --> 00:15:28.259
The patient was a 55 year old
woman with early stage lung cancer.

335

00:15:28.259 --> 00:15:30.019
who works in a medical accounting office.

336

00:15:30.019 --> 00:15:31.460
She and her family have no history of smoking.

337

00:15:47.759 --> 00:15:50.919
Every person breathes in this black stuff.

338

00:15:50.919 --> 00:15:53.039
We're all the same.

339

00:15:53.039 --> 00:15:53.879
Does she smoke?

340

00:15:53.879 --> 00:15:55.960
No, she doesn't.

341

00:15:55.960 --> 00:15:57.480
But she's from [XXX],

342

00:15:57.559 --> 00:15:59.720
your hometown.

343

00:15:59.720 --> 00:16:01.679
The air quality is bad there?

344

00:16:01.799 --> 00:16:02.559
Yeah, it's not clean

345

00:16:02.559 --> 00:16:05.360
so this might be stuff from the atmosphere.

346

00:16:06.460 --> 00:16:08.500
Over time carbon particles turn it completely black.

347

00:16:10.240 --> 00:16:13.799
Only her lymph nodes are black.

348
00:16:13.799 --> 00:16:16.960
That means she inhaled a lot of dust.

349
00:16:16.960 --> 00:16:19.240
The lymphatic system is crucial to
the functionality of the immune system

350
00:16:19.240 --> 00:16:21.120
and the immune system's function is disease prevention.

351
00:16:21.120 --> 00:16:23.600
When this black substance accumulates on top

352
00:16:23.600 --> 00:16:25.200
does it affect the body's ability
to fight cancerous cells?

353
00:16:25.200 --> 00:16:31.200
It may have already overwhelmed the lymphatic system.

354
00:16:31.200 --> 00:16:34.840
So if you look at the World Health Organization (WHO),

355
00:16:34.840 --> 00:16:37.720
this year they've designated chronic lung disease

356
00:16:37.720 --> 00:16:39.759
as a high risk factor for lung cancer.

357
00:16:42.659 --> 00:16:44.820
We can be comforted knowing
this surgery was very successful.

358
00:16:44.820 --> 00:16:46.820
After the tumor was extracted,

359
00:16:46.820 --> 00:16:48.259
the patient fully recovered.

360

00:16:48.259 --> 00:16:52.259

After the surgery, the doctor gave her
husband the black lymph node to look at.

361

00:16:52.259 --> 00:16:53.019

He asked,

362

00:16:53.019 --> 00:16:55.980

"Can you tell me exactly why my wife got this tumor?"

363

00:16:55.980 --> 00:16:58.980

The doctor said he could only deduce
according to his clinical experience

364

00:16:58.980 --> 00:17:00.460

that he suspected the cause was air pollution.

365

00:17:00.460 --> 00:17:04.619

The WHO classifies micro-particles
as Group 1 carcinogens.

366

00:17:05.819 --> 00:17:07.539

I had a question when I heard him say this.

367

00:17:07.539 --> 00:17:08.579

If it was lung cancer,

368

00:17:08.579 --> 00:17:11.980

shouldn't it have an incubation
period of at least around 10 years?

369

00:17:11.980 --> 00:17:14.180

But we've only been hearing about
air pollution for two years, right?

370

00:17:14.180 --> 00:17:17.980

So then how can it lead to lung cancer so quickly?

371

00:17:17.980 --> 00:17:19.460

I asked NASA if they could send me

372

00:17:19.460 --> 00:17:22.740
overhead satellite images of
Northern China from the past 10 years.

373
00:17:23.700 --> 00:17:25.180
This is what I received.

374
00:17:25.180 --> 00:17:28.779
The sky over Beijing in 2012.

375
00:17:28.779 --> 00:17:31.980
December 2011.

376
00:17:31.980 --> 00:17:34.740
2010.

377
00:17:34.740 --> 00:17:37.339
The sky over Northern China in 2009.

378
00:17:37.339 --> 00:17:39.220
Let's check 10 years earlier.

379
00:17:39.220 --> 00:17:40.980
Northern China in 2005.

380
00:17:40.980 --> 00:17:42.380
But it's hard to believe.

381
00:17:42.380 --> 00:17:44.900
I was living in Northern China for those 10 years.

382
00:17:44.900 --> 00:17:47.480
How could I not be aware of
the air pollution around me?

383
00:17:47.480 --> 00:17:48.859
I went to find Dr. Tang Xiaoyan,

384
00:17:48.859 --> 00:17:52.180
the air quality assurance team
leader during the Beijing Olympics.

385

00:17:52.180 --> 00:17:55.099
She gave me this graph.

386

00:17:55.099 --> 00:17:58.460
This is 11 years ago in 2004.

387

00:17:58.460 --> 00:18:00.099
At that time we weren't monitoring PM2.5 levels,

388

00:18:00.099 --> 00:18:01.380
but we had PM10 levels.

389

00:18:01.380 --> 00:18:04.700
She said that according to estimates back then,

390

00:18:04.700 --> 00:18:05.819
during polluted periods at the time,

391

00:18:05.819 --> 00:18:07.500
PM2.5 levels could have reached 300 to 400

392

00:18:07.500 --> 00:18:10.380
which is considered severe pollution today.

393

00:18:10.380 --> 00:18:11.299
I asked her,

394

00:18:11.299 --> 00:18:14.180
"I was in Beijing in 2004, was I that blind?"

395

00:18:15.259 --> 00:18:18.339
She told me to look at this photo.

396

00:18:18.339 --> 00:18:20.539
"What is that?"

397

00:18:20.539 --> 00:18:22.539
I said it looks like fog, right?

398

00:18:22.539 --> 00:18:24.140

How come I didn't know back then?

399

00:18:24.140 --> 00:18:27.019

She said I should go back and check the headline from that day's newspaper.

400

00:18:27.019 --> 00:18:30.940

"Fog at Beijing Capital Airport Causes Worst Flight Delays in Recent Years"

401

00:18:30.940 --> 00:18:30.960

"Fog at Beijing Capital Airport Causes Worst Flight Delays in Recent Years"

402

00:18:30.960 --> 00:18:32.819

We all believed that was fog back then.

403

00:18:32.819 --> 00:18:35.220

That's what we called it.

404

00:18:35.220 --> 00:18:36.859

So when I see this photograph,

405

00:18:36.859 --> 00:18:38.460

as a former journalist,

406

00:18:38.460 --> 00:18:41.059

I start to blame myself.

407

00:18:41.059 --> 00:18:44.380

Because for all of those years I thought I was reporting stories on pollution across the country.

408

00:18:44.380 --> 00:18:48.299

But I always thought pollution occurred in mining areas,

409

00:18:48.299 --> 00:18:50.460

and near factories spouting out smoke.

410

00:18:50.460 --> 00:18:54.700

I never thought the skies that we see living in the middle of cities

411

00:18:54.700 --> 00:18:55.660
could be polluted.

412

00:18:55.660 --> 00:18:57.259
I wasn't a journalist anymore.

413

00:18:57.259 --> 00:18:58.539
I was an interested party.

414

00:19:00.740 --> 00:19:02.380
But I still had another question.

415

00:19:02.380 --> 00:19:04.220
If that was really the case

416

00:19:04.220 --> 00:19:07.420
didn't every household burn
kerosene stove when I was growing up?

417

00:19:07.420 --> 00:19:10.500
Didn't we fall asleep among that
choking smell every single night?

418

00:19:10.500 --> 00:19:12.460
Why didn't I hear about lots of
people getting lung cancer back then?

419

00:19:13.220 --> 00:19:14.539
I always had this question.

420

00:19:14.539 --> 00:19:18.500
I brought it to Professor He Xingzhou
who has researched this for 30 years.

421

00:19:18.500 --> 00:19:21.259
He gave me a book of data.

422

00:19:21.259 --> 00:19:22.660
This.

423

00:19:22.660 --> 00:19:30.259
"A Situational Analysis Of The Relationship Between Air
Pollution And Deaths In 26 Chinese Cities 1976 - 1981.

424
00:19:30.259 --> 00:19:33.819
I'll put his conclusion on the
screen so everyone can see it clearly.

425
00:19:33.819 --> 00:19:34.980
It's very simple.

426
00:19:34.980 --> 00:19:39.579
The air pollution levels at that time already
correlate with lung cancer mortality rates.

427
00:19:39.579 --> 00:19:41.500
Most of the pollution back then was from burning coal.

428
00:19:42.279 --> 00:19:45.160
Unfortunately, this material was
restricted to internal use at the time.

429
00:19:48.539 --> 00:19:50.779
It wasn't like during those years
people couldn't smell the smoke,

430
00:19:50.779 --> 00:19:53.900
but the warmth and energy brought
by burning coal was more important.

431
00:19:53.900 --> 00:19:55.180
After 1980,

432
00:19:55.180 --> 00:19:57.119
there were 3,700 factories within Beijing.

433
00:19:57.220 --> 00:19:59.579
For a large agricultural nation
brimming with hope for development,

434
00:19:59.579 --> 00:20:01.779
the smokestack was a sign of progress.

435
00:20:01.779 --> 00:20:04.160
For some, they are just two smokestacks.

436
00:20:04.160 --> 00:20:04.180
For some, they are just two smokestacks.

437
00:20:04.180 --> 00:20:06.920
For others, they point the way back home.

438
00:20:07.579 --> 00:20:11.339
We lacked experience, understanding
and the technology to combat pollution.

439
00:20:11.339 --> 00:20:13.059
There were no set standards for major pollutants.

440
00:20:13.059 --> 00:20:15.059
Even though coal consumption
was far less than it is today,

441
00:20:15.059 --> 00:20:16.539
emissions were huge.

442
00:20:16.539 --> 00:20:19.019
Looking at data from a scientific research
institution's PM2.5 station,

443
00:20:19.019 --> 00:20:22.619
the average PM2.5 concentration
in 2006 was higher than it is today.

444
00:20:22.619 --> 00:20:23.779
It was in this year

445
00:20:23.779 --> 00:20:27.660
China established set standards for
sulfur dioxide and other major emissions.

446
00:20:27.660 --> 00:20:28.420
Since then,

447

00:20:28.420 --> 00:20:30.180
major air pollutants on the whole started to decline.

448
00:20:30.180 --> 00:20:30.660
However,

449
00:20:30.660 --> 00:20:33.900
fine particulate matter affecting visibility has risen.

450
00:20:33.900 --> 00:20:35.059
The number of extremely polluted days has also risen.

451
00:20:35.059 --> 00:20:36.180
The number of extremely polluted days has also risen.

452
00:20:36.180 --> 00:20:37.619
The public has been strongly affected.

453
00:20:37.619 --> 00:20:38.180
The public has been strongly affected.

454
00:20:38.460 --> 00:20:40.380
Economic development has given
Chinese people longer life spans

455
00:20:40.380 --> 00:20:42.579
and more opportunities to remain healthy.

456
00:20:42.579 --> 00:20:45.380
But it has also given prominence
to hazardous air pollution.

457
00:20:45.380 --> 00:20:46.380
Within the past 30 years,

458
00:20:46.380 --> 00:20:49.220
our country's lung cancer death rate has risen 465%.

459
00:20:49.220 --> 00:20:52.900
Even though smoking and aging
are the main culprits for this number,

460
00:20:52.900 --> 00:20:55.339
fine particulate matter is clearly a cancer risk

461
00:20:55.339 --> 00:20:56.740
and is receiving increased attention.

462
00:20:56.980 --> 00:20:57.900
In 2012,

463
00:20:57.900 --> 00:21:00.059
PM2.5 levels begin to be monitored.

464
00:21:00.059 --> 00:21:02.859
China's "Air Pollution Prevention and
Control Action Plan" is put into effect.

465
00:21:02.859 --> 00:21:04.619
As incomes rise and news becomes more transparent,

466
00:21:04.619 --> 00:21:06.500
the public's expectation for
a healthy environment rises.

467
00:21:09.819 --> 00:21:11.500
Any person...

468
00:21:11.500 --> 00:21:14.420
I shouldn't say "person
...any living creature wants this life.

469
00:21:14.420 --> 00:21:17.420
Springtime comes, you open the
door and the wind rushes in.

470
00:21:17.420 --> 00:21:19.940
So does the smell of flowers and the color of spring.

471
00:21:19.940 --> 00:21:22.099
Sometimes when you're hit with
a rain shower or some mist,

472

00:21:22.099 --> 00:21:25.779
you can't help but want to take a deep breath of air.

473
00:21:25.779 --> 00:21:27.579
You want to taste that sensation of the rain.

474
00:21:27.579 --> 00:21:28.980
Crisp and fresh.

475
00:21:30.059 --> 00:21:34.140
In the autumn you want to while
away an afternoon with your loved one,

476
00:21:34.140 --> 00:21:36.859
basking listlessly in the sun.

477
00:21:36.859 --> 00:21:38.220
In the winter,

478
00:21:38.220 --> 00:21:39.900
you and your child will step outside.

479
00:21:39.900 --> 00:21:42.579
As the snowflakes fall and she
sticks out her tongue to catch them,

480
00:21:42.579 --> 00:21:45.980
you'll impart to her the wonders of life and nature.

481
00:21:47.700 --> 00:21:48.859
But the reality?

482
00:21:51.220 --> 00:21:52.779
This year, every morning I wake up,

483
00:21:52.779 --> 00:21:57.420
the first thing I do is check the
Air Quality Index (AQI) on my phone.

484
00:21:57.420 --> 00:21:59.259
I use it to plan my day.

485

00:21:59.259 --> 00:22:02.099

I rely on and look forward to a
north-westerly wind to live my life.

486

00:22:02.099 --> 00:22:03.299

I wear a mask taking a walk.

487

00:22:03.299 --> 00:22:04.579

I wear a mask shopping.

488

00:22:04.579 --> 00:22:06.380

I wear a mask going out to meet friends.

489

00:22:06.380 --> 00:22:08.539

I use glue to secure my home's windows.

490

00:22:08.539 --> 00:22:10.819

Every crack is sealed tight.

491

00:22:10.819 --> 00:22:12.539

When I brought my baby outside for her immunizations,

492

00:22:12.539 --> 00:22:14.980

she giggled and I was terrified.

493

00:22:17.059 --> 00:22:19.380

To tell you the truth, I'm not afraid of death.

494

00:22:19.380 --> 00:22:21.460

I just don't want to live like this.

495

00:22:23.059 --> 00:22:24.619

So every time I come across someone who asks me,

496

00:22:24.619 --> 00:22:26.859

"What exactly do you want to do this for?"

497

00:22:26.859 --> 00:22:28.059

I have no choice but to simply tell them,

498

00:22:28.059 --> 00:22:30.619
"I have a personal grudge against the smog."

499
00:22:31.740 --> 00:22:33.740
I want to know where it comes from.

500
00:22:33.740 --> 00:22:35.819
I want to figure out what it's all about.

501
00:22:35.819 --> 00:22:39.380
I put the sampling cassette
under an electron microscope

502
00:22:39.380 --> 00:22:41.140
so I could see what the PM2.5 particles looked like.

503
00:22:41.140 --> 00:22:43.779
It wasn't like what I imagined, grain
after grain of the same shape and size.

504
00:22:43.779 --> 00:22:46.059
There were many types all mixed together.

505
00:22:46.059 --> 00:22:47.819
This kind of mixture increases toxicity

506
00:22:47.819 --> 00:22:49.980
and allows the particles to grow
in number and size quickly.

507
00:22:49.980 --> 00:22:51.859
Chemical reactions take place between them.

508
00:22:51.859 --> 00:22:54.779
According to the Chinese Academy of Sciences,
where do they come from?

509
00:22:54.779 --> 00:22:56.579
From burning coal, oil, bio--mass,

510
00:22:56.579 --> 00:22:58.900
industry, cultivation, chemical fertilizer,

and airborne dust.

511

00:22:58.900 --> 00:23:01.500

The vast majority of particles come from things related to human activity.

512

00:23:01.500 --> 00:23:06.619

If you want to sum up where most of the particles come from,

513

00:23:06.619 --> 00:23:07.940

this is the conclusion.

514

00:23:07.940 --> 00:23:12.700

60% of China's PM2.5 come from burning coal or oil.

515

00:23:12.700 --> 00:23:14.619

That is to say burning fossil fuels.

516

00:23:16.539 --> 00:23:19.180

PM2.5 has existed even before humans appeared.

517

00:23:19.180 --> 00:23:21.819

Volcanic eruptions and forest fires have a large amount of fine particulate matter.

518

00:23:22.460 --> 00:23:24.579

Since we learned to build fire for energy,

519

00:23:24.579 --> 00:23:26.740

human activity has caused PM2.5.

520

00:23:27.140 --> 00:23:28.380

Large scale coal and carbon use

521

00:23:28.380 --> 00:23:30.980

once brought severe smog to England and Germany.

522

00:23:31.299 --> 00:23:32.619

And after the arrival of the Age of Oil,

523

00:23:32.619 --> 00:23:36.099
burning coal produced heavy
pollution in America and Japan.

524
00:23:36.700 --> 00:23:37.740
At this very moment,

525
00:23:37.740 --> 00:23:41.059
there are still many developing countries
in the process of industrialization.

526
00:23:41.420 --> 00:23:42.380
India

527
00:23:42.380 --> 00:23:43.220
Iran

528
00:23:43.220 --> 00:23:44.299
Pakistan

529
00:23:44.299 --> 00:23:44.900
Afghanistan

530
00:23:44.900 --> 00:23:47.779
These countries are bearing the
consequences from burning fossil fuel.

531
00:23:47.779 --> 00:23:50.859
And China is seen as the fastest
growing developing country.

532
00:23:50.859 --> 00:23:51.859
China is enormous

533
00:23:51.859 --> 00:23:54.940
which causes us to burn an
enormous amount of fossil fuel.

534
00:23:58.740 --> 00:24:00.420
How much do we actually burn?

535
00:24:00.420 --> 00:24:01.420

Let's take a look.

536

00:24:01.420 --> 00:24:02.980

This map shows

537

00:24:02.980 --> 00:24:06.819

the intensity of global fossil
fuel consumption in 2014.

538

00:24:06.819 --> 00:24:08.420

Look at how bright China is.

539

00:24:08.420 --> 00:24:11.539

That pulsating red and white area?

540

00:24:11.539 --> 00:24:13.339

That's our country.

541

00:24:13.339 --> 00:24:16.660

According to the map, China burns
3 to 4 times more than Europe.

542

00:24:16.660 --> 00:24:19.059

That's how much fossil fuel we burn.

543

00:24:19.059 --> 00:24:21.259

And I was most surprised to learn that

544

00:24:21.259 --> 00:24:26.059

massive chemical reactions occur
between coal and oil pollutants.

545

00:24:30.079 --> 00:24:32.279

Pollution from burning coal hasn't even been solved,
yet there's automobile pollution on top of that.

546

00:24:32.279 --> 00:24:33.200

Pollution from burning coal hasn't even been solved,
yet there's automobile pollution on top of that.

547

00:24:33.200 --> 00:24:37.319

China's current pollution problem

basically comes from these two sources.

548

00:24:37.319 --> 00:24:41.200

All sorts of substances go through all kinds of reactions in the atmosphere.

549

00:24:41.240 --> 00:24:43.839

Even if atmospheric conditions stabilize, pollutants still remain.

550

00:24:43.839 --> 00:24:45.920

And unfortunately, they can't diffuse.

551

00:24:45.920 --> 00:24:47.640

They react with each other.

552

00:24:47.640 --> 00:24:48.839

These are called secondary particles.

553

00:24:49.039 --> 00:24:52.599

Combined pollution, adsorption
adhesion, collision, amalgamate...

554

00:24:52.599 --> 00:24:54.079

They all mix together.

555

00:24:54.079 --> 00:24:56.559

We can't change natural conditions.

556

00:24:56.559 --> 00:24:58.240

We can only change ourselves.

557

00:24:58.240 --> 00:25:00.599

This is the way to reduce emissions at the source.

558

00:25:03.259 --> 00:25:06.339

The entire world must burn coal and oil, right?

559

00:25:06.339 --> 00:25:07.900

So what about our coal?

560

00:25:07.940 --> 00:25:09.980
Do you know how much coal China is burning?

561
00:25:09.980 --> 00:25:13.539
In 2013, we burned 3.6 billion tons,

562
00:25:13.539 --> 00:25:17.619
but do you how much the rest of the world burned?

563
00:25:17.619 --> 00:25:21.579
We burned more coal than all the
other countries of the world combined.

564
00:25:21.579 --> 00:25:25.380
The last country to reach this level
of consumption was England in 1860.

565
00:25:25.380 --> 00:25:28.420
But they later paid a heavy price.

566
00:25:31.099 --> 00:25:33.700
Deep inside an abandoned mine in South Wales

567
00:25:33.700 --> 00:25:36.740
lies the heart of England's Industrial Age.

568
00:25:36.740 --> 00:25:40.619
It once drove the engine of the
world's most powerful empire,

569
00:25:40.619 --> 00:25:44.259
but it also caused one of the most
frightening events in England's history.

570
00:25:47.180 --> 00:25:48.940
These smokestacks are 103 meters tall.

571
00:25:48.940 --> 00:25:51.660
They are symbols of the peak of
England's Industrial Age.

572
00:25:51.660 --> 00:25:54.539

When the Battersea Power Station was build in 1930,

573

00:25:54.539 --> 00:25:56.460

it burned nearly 10,000 tons of coal per week

574

00:25:56.460 --> 00:25:58.579

to supply one fifth of London's electricity.

575

00:25:58.579 --> 00:26:01.019

It can be said that London almost ate coal to survive.

576

00:26:01.019 --> 00:26:04.700

Trains, steamboats, iron, steal, daily necessities..

577

00:26:04.700 --> 00:26:07.119

contained millions of tiny
volcanoes erupting in unison.

578

00:26:07.119 --> 00:26:09.220

It was like the entire city of London

579

00:26:09.220 --> 00:26:10.779

Since they burned large amounts of poor quality coal

580

00:26:10.779 --> 00:26:12.259

and emitted pollutants at low altitudes,

581

00:26:12.259 --> 00:26:13.539

chimneys from household fireplaces

582

00:26:13.539 --> 00:26:16.740

produced more than twice the pollution as industry.

583

00:26:16.740 --> 00:26:18.259

As time went on,

584

00:26:18.259 --> 00:26:20.059

London was blanketed with soot.

585

00:26:20.420 --> 00:26:21.660

The public wore masks to school.

586

00:26:22.420 --> 00:26:23.660

They wore them shopping,

587

00:26:24.319 --> 00:26:25.160

to walk the dog,

588

00:26:25.579 --> 00:26:26.940

even while sharing a kiss.

589

00:26:31.579 --> 00:26:35.099

The day of the disaster was December 5, 1952.

590

00:26:35.539 --> 00:26:39.859

A cold air front stretched across the English Channel and covered the entire Thames Valley.

591

00:26:39.859 --> 00:26:43.140

The soot was trapped below the clouds and couldn't dissipate.

592

00:26:46.599 --> 00:26:48.880

Residents walking the streets couldn't even see their own feet.

593

00:26:48.880 --> 00:26:50.680

A blind person could have guided you home.

594

00:26:50.680 --> 00:26:52.119

Spotlights were cast on traffic cops

595

00:26:52.119 --> 00:26:53.359

to avoid being run over.

596

00:26:53.359 --> 00:26:55.240

The entire city was deathly quiet.

597

00:26:56.559 --> 00:26:57.480

Only ambulances were seen

598

00:26:57.480 --> 00:26:59.920

because they were transporting
those lives that hung in the balance.

599

00:26:59.920 --> 00:27:04.279
But they had to rely on people
holding torches to navigate the roads.

600

00:27:06.880 --> 00:27:10.559
From beginning to end, the
Great Smog took 12,000 lives.

601

00:27:10.559 --> 00:27:13.200
Lung tissue from the deceased
was taken for testing which confirmed

602

00:27:13.200 --> 00:27:16.400
they died due to long-term exposure
to black carbon produced by burning coal

603

00:27:16.400 --> 00:27:19.720
and short-term exposure to high concentrations
of micro-particles containing heavy metals.

604

00:27:19.720 --> 00:27:21.759
Calculations from the Clean Air Coalition show that

605

00:27:21.759 --> 00:27:25.079
London's pollution levels at the time may
have far surpassed China's current levels.

606

00:27:25.079 --> 00:27:27.000
Even though PM2.5 wasn't measured in 1952,

607

00:27:27.000 --> 00:27:29.680
the concentration of sulfur dioxide
during the Great Smog

608

00:27:29.680 --> 00:27:32.279
surpassed WHO standards by 190 times,

609

00:27:32.279 --> 00:27:35.440
ten times more than China's excessive PM2.5 levels.

610

00:27:39.019 --> 00:27:42.420

In the 1960s, after The Great Smog of London,

611

00:27:42.420 --> 00:27:46.660

one after one, countries began to decrease or limit their coal consumption.

612

00:27:46.660 --> 00:27:50.500

But precisely at this time, China began its economic reform and opened up to the world.

613

00:27:50.500 --> 00:27:52.900

Our country, cut off and left behind for so many years,

614

00:27:52.900 --> 00:27:56.019

urgently needed massive amounts of energy to develop rapidly.

615

00:27:56.019 --> 00:27:57.579

China chose coal to get that energy.

616

00:27:57.579 --> 00:27:58.859

This curve shows its growth as a source of energy.

617

00:28:01.279 --> 00:28:04.240

India is in a similar situation.

618

00:28:04.240 --> 00:28:07.680

India is set to become the world's second largest coal consuming nation.

619

00:28:07.680 --> 00:28:12.200

Moreover, India's current industry has no set standards for major pollutant emissions.

620

00:28:12.200 --> 00:28:15.480

India is also a country suffering from serious pollution.

621

00:28:15.480 --> 00:28:18.599

Where in China is coal consumed the most?

622

00:28:18.599 --> 00:28:22.079

Let's take a look at the 3.6 billion
tons consumed in 2013.

623

00:28:22.079 --> 00:28:24.920

380 million tons of coal were burned in
Beijing, Tianjin, and Hebei.

624

00:28:24.920 --> 00:28:30.640

And among this, 300 million tons were burned in Hebei.

625

00:28:30.640 --> 00:28:31.759

I'm incredibly surprised.

626

00:28:31.759 --> 00:28:34.039

I always thought Shanxi was the biggest culprit.

627

00:28:34.039 --> 00:28:36.279

When did Hebei start burning that much coal?

628

00:28:36.279 --> 00:28:38.160

Hao Jiming from Tsinghua University asked me,

629

00:28:39.079 --> 00:28:41.799

"Have you seen the global
ranking for coal and steel production?"

630

00:28:42.119 --> 00:28:45.200

He said China is #1,

631

00:28:45.200 --> 00:28:46.640

Hebei is #2,

632

00:28:46.640 --> 00:28:48.039

Tangshan is #3,

633

00:28:48.039 --> 00:28:48.880

and America is #4.

634

00:28:51.039 --> 00:28:52.079

He also said

635
00:28:52.079 --> 00:28:54.640
Tangshan falsified their output to be #5.

636
00:28:54.640 --> 00:28:56.960
But does increased coal consumption and
industry necessarily mean more pollution?

637
00:28:56.960 --> 00:28:58.640
Other countries produce steel.

638
00:28:58.640 --> 00:29:01.480
He said, "Take a trip to Tangshan
and you'll understand."

639
00:29:01.480 --> 00:29:03.039
So last October,

640
00:29:03.039 --> 00:29:05.880
together with the Ministry of Environment's (MEP) North
China Environmental Protection Supervision Center

641
00:29:05.880 --> 00:29:08.079
we brought drones to Tangshan

642
00:29:08.079 --> 00:29:09.640
to survey the actual conditions.

643
00:29:14.039 --> 00:29:15.279
See that burst of smoke over there?

644
00:29:15.279 --> 00:29:16.880
It's not clear because of the smog.

645
00:29:20.059 --> 00:29:22.460
Visual confirmation of industrial
waste gas emission is impossible.

646
00:29:26.279 --> 00:29:29.160
We can't see clearly in this weather.

647

00:29:35.559 --> 00:29:38.200
Drone inspection fails due to heavy smog.

648
00:29:38.200 --> 00:29:39.480
Take a look behind us.

649
00:29:39.480 --> 00:29:40.440
Is anyone following?

650
00:29:42.240 --> 00:29:43.839
The MEP pays a surprise visit to the factory.

651
00:29:52.339 --> 00:29:55.619
This choking smell of sulfur dioxide must be the smoke.

652
00:29:55.619 --> 00:29:59.539
Now we can see a lot smoke is leaking from the edges.

653
00:29:59.880 --> 00:30:03.519
The smoke is uncontrolled emission
and will be released into the atmosphere.

654
00:30:03.519 --> 00:30:05.160
Why aren't you using dust hoods?

655
00:30:05.160 --> 00:30:06.279
We are.

656
00:30:06.279 --> 00:30:08.359
Then why is there so much smoke and dust?

657
00:30:11.680 --> 00:30:13.160
We are using them. Look it's being sucked up.

658
00:30:19.000 --> 00:30:21.640
Fuck! What was that? I'll go down and check.

659
00:30:21.640 --> 00:30:24.200
This is the most dangerous report I've ever done!

660
00:30:24.200 --> 00:30:25.440

My god, how scary!

661

00:30:25.519 --> 00:30:26.640
Stop! Stop!

662

00:30:26.880 --> 00:30:27.720
Someone fell!

663

00:30:30.599 --> 00:30:33.839
That man who fell was Inspector Zhang Dawei of the MEP.

664

00:30:33.839 --> 00:30:35.680
We were terrified

665

00:30:35.680 --> 00:30:39.519
because there were no lights
or caution signs in the factory.

666

00:30:39.519 --> 00:30:41.160
This hole was 3 meters deep

667

00:30:41.160 --> 00:30:42.880
and filled with rebar and cement.

668

00:30:42.880 --> 00:30:45.559
Dawei was checking if this
place was emitting pollutants

669

00:30:45.559 --> 00:30:47.279
when he fell in.

670

00:30:47.279 --> 00:30:48.960
Luckily, he wasn't seriously injured.

671

00:30:48.960 --> 00:30:51.720
That night we took him to the
hospital and then back to Beijing.

672

00:30:53.079 --> 00:30:54.880
But most surprising to me was that

673

00:30:54.880 --> 00:30:57.400
after we paid such a high price,
after we went through so much trouble

674
00:30:57.400 --> 00:30:59.759
and clearly shot evidence of them emitting pollutants,

675
00:30:59.759 --> 00:31:02.920
ultimately this factory didn't receive any fine.

676
00:31:04.279 --> 00:31:06.079
I asked Dawei why.

677
00:31:06.079 --> 00:31:07.839
He said I should go ask his boss.

678
00:31:07.839 --> 00:31:11.039
More than 60% of iron and steel enterprises

679
00:31:11.039 --> 00:31:12.599
don't go through any assessment procedure.

680
00:31:12.599 --> 00:31:14.440
They've tossed environmental
protection laws to the wind.

681
00:31:14.440 --> 00:31:16.920
They continually call off assessments

682
00:31:16.920 --> 00:31:20.039
no matter if they are legitimate businesses or not.

683
00:31:20.039 --> 00:31:24.440
The unlicensed ones are the
most reckless and irresponsible.

684
00:31:24.440 --> 00:31:28.039
Regulatory ministries don't want to
go or touch these factories at all.

685
00:31:28.039 --> 00:31:30.039
How can we shut them down?

686

00:31:30.039 --> 00:31:31.680

How can we ban them?

687

00:31:31.680 --> 00:31:33.039

Why can't you shut them down?

688

00:31:33.039 --> 00:31:34.359

Are you kidding?

689

00:31:34.359 --> 00:31:36.319

You know how many people producing
10 million tons of steel employs?

690

00:31:36.319 --> 00:31:37.680

100,000.

691

00:31:37.920 --> 00:31:40.240

How important is the steel industry in Hebei?

692

00:31:40.240 --> 00:31:44.000

It's at the level where you
can't just shut factories down.

693

00:31:44.240 --> 00:31:48.039

A place with a huge amount of
concentrated heavy industry

694

00:31:48.039 --> 00:31:49.680

consuming a huge amount of coal.

695

00:31:49.680 --> 00:31:53.200

Moreover, it has no effective pollution controls

696

00:31:53.200 --> 00:31:54.880

and its factories can't be banned or shut down.

697

00:31:54.880 --> 00:31:56.240

What is the result?

698

00:31:56.240 --> 00:31:57.720

I have a good friend named Hao.

699

00:31:57.720 --> 00:31:59.240

She was also a colleague of mine at "News Probe"

700

00:31:59.240 --> 00:32:01.920

and went with me to Shanxi to cover the local pollution ten years ago.

701

00:32:01.920 --> 00:32:03.440

She knows I come from Linfen (a city in Shanxi)

702

00:32:03.440 --> 00:32:05.079

and sometimes she'd send photos to tease me.

703

00:32:05.079 --> 00:32:09.720

She'd say "I hear your hometown is the world's most polluted city."

704

00:32:09.720 --> 00:32:10.839

I had no comeback.

705

00:32:10.839 --> 00:32:12.240

But ten years later,

706

00:32:12.240 --> 00:32:14.079

I sent her this picture.

707

00:32:16.839 --> 00:32:17.880

Let's zoom in a bit.

708

00:32:20.700 --> 00:32:25.380

"Celebrating that our city is no longer the most polluted out of 74 cities in China!"

709

00:32:25.380 --> 00:32:27.579

This is an actual banner from Hao's home province of Hebei.

710

00:32:27.579 --> 00:32:28.380

Unfortunately,

711

00:32:28.380 --> 00:32:31.099
three months later this city
bounced back to last place.

712

00:32:31.099 --> 00:32:35.579
But this kind of joke really makes me sad.

713

00:32:35.579 --> 00:32:38.220
And for residents of Beijing,

714

00:32:38.220 --> 00:32:40.420
so long as the wind blows from the south,

715

00:32:40.420 --> 00:32:42.460
Hebei's pollution blows north like this.

716

00:32:42.460 --> 00:32:44.420
There is no wall keeping the air out.

717

00:32:44.420 --> 00:32:46.900
This is what "sharing a common fate" means.

718

00:32:46.900 --> 00:32:48.940
This is what "sharing a common fate" means.

719

00:32:48.940 --> 00:32:51.099
I have another friend named Fan.

720

00:32:51.099 --> 00:32:53.259
She's from Jiangsu Province.

721

00:32:53.259 --> 00:32:57.180
We used to argue about whose
province was more polluted.

722

00:32:57.180 --> 00:32:58.660
She'd give up and say,

723

00:32:58.660 --> 00:33:01.059
"Jeez, we southerners know nothing about pollution!"

724
00:33:02.539 --> 00:33:04.980
Nowadays, her region of China is also very polluted.

725
00:33:06.619 --> 00:33:07.640
But, she was surprised.

726
00:33:07.640 --> 00:33:09.539
She said, "That's impossible.

727
00:33:09.539 --> 00:33:11.420
Our pollution can't be related to coal

728
00:33:11.420 --> 00:33:13.180
because I've never even seen coal in my life."

729
00:33:13.180 --> 00:33:14.019
That's right.

730
00:33:14.019 --> 00:33:16.539
I gave her this map to look at.

731
00:33:16.539 --> 00:33:18.700
"These are Jiangsu's steel factories."

732
00:33:18.700 --> 00:33:20.539
"These are Jiangsu's power plants."

733
00:33:20.539 --> 00:33:23.859
"These are Jiangsu's cement plants."

734
00:33:23.859 --> 00:33:25.259
"In your home province,

735
00:33:25.259 --> 00:33:27.700
there is an power plant every 30 km."

736
00:33:27.700 --> 00:33:30.579
So what is the current state of
emissions from these factories?

737

00:33:30.579 --> 00:33:35.099
Here we can see their emissions in real-time.

738
00:33:35.099 --> 00:33:37.500
Completely red means they are exceeding the limit.

739
00:33:37.500 --> 00:33:39.059
Let's zoom in so you can see

740
00:33:39.059 --> 00:33:43.700
how many factories are exceeding
emission standards across Eastern China.

741
00:33:43.700 --> 00:33:45.380
And trapped in the middle is Shanghai

742
00:33:45.380 --> 00:33:46.980
which burns its fair share of coal as well.

743
00:33:46.980 --> 00:33:49.700
Shanghai burns the largest
quantity of coal per unit area

744
00:33:49.700 --> 00:33:50.940
of any large international city.

745
00:33:50.940 --> 00:33:52.380
For every square meter of land,

746
00:33:52.380 --> 00:33:54.140
10 kilograms of coal are burned.

747
00:33:54.140 --> 00:33:57.220
Burning more and more coal will have what consequences?

748
00:33:57.220 --> 00:33:59.019
One question I've never even considered

749
00:33:59.019 --> 00:34:01.019
is less and less good quality coal will be burned.

750

00:34:01.019 --> 00:34:01.619
Right?

751
00:34:01.619 --> 00:34:02.740
Then what should we do?

752
00:34:02.740 --> 00:34:05.180
So poor quality coal is used more often.

753
00:34:05.180 --> 00:34:07.539
How poor exactly is it?

754
00:34:07.539 --> 00:34:09.380
This is the coal we commonly see.

755
00:34:09.380 --> 00:34:10.940
And this?

756
00:34:10.940 --> 00:34:12.940
Is this coal?

757
00:34:12.940 --> 00:34:14.260
At first, I thought this can't be coal.

758
00:34:14.260 --> 00:34:15.219
It has to be wood

759
00:34:15.219 --> 00:34:18.179
because you can still see the
grain and fossil on the surface.

760
00:34:18.179 --> 00:34:19.900
However, the Coal Preparation Society told me

761
00:34:19.900 --> 00:34:20.539
this is coal.

762
00:34:20.539 --> 00:34:21.780
It's called lignite or brown coal.

763
00:34:21.780 --> 00:34:23.420

and it's the world's youngest coal.

764

00:34:23.420 --> 00:34:25.699

It's so young that its degree of alteration or "rank" is extremely low.

765

00:34:25.699 --> 00:34:30.139

As it's burned, half will turn to black ash and rise into the atmosphere.

766

00:34:30.139 --> 00:34:32.059

So how much lignite do we use?

767

00:34:32.059 --> 00:34:36.260

This graph shows our output of lignite over the past several years.

768

00:34:36.260 --> 00:34:37.980

And here are its consequences.

769

00:34:37.980 --> 00:34:40.659

On October 21, 2013,

770

00:34:40.659 --> 00:34:42.980

the first day Harbin turned on its heating that year,

771

00:34:42.980 --> 00:34:46.500

the PM2.5 pollution levels skyrocketed to over 1,000.

772

00:34:46.500 --> 00:34:48.420

This is what life looked like in Harbin that day.

773

00:34:50.260 --> 00:34:51.500

I asked Harbin's Environmental Protection Bureau

774

00:34:51.500 --> 00:34:56.300

if it was true public buses got lost along their routes because visibility was so bad.

775

00:34:56.300 --> 00:34:58.019

He forced a smile and said,

776

00:34:58.019 --> 00:35:00.059

"Not just the buses, our directors got lost too."

777

00:35:01.500 --> 00:35:04.019

He said he went out to inspect some sites that day,

778

00:35:04.019 --> 00:35:07.219

but no one recognized him
because the smog was so thick.

779

00:35:07.219 --> 00:35:11.059

Harbin's pollution was caused by
burning over 20 million tons of lignite.

780

00:35:11.059 --> 00:35:15.059

Additionally, in 2013, several hundred thousand
of these small boilers across China

781

00:35:15.059 --> 00:35:18.059

had no standards and no supervision.

782

00:35:18.059 --> 00:35:20.940

They could burn, emit, and release just like this.

783

00:35:20.940 --> 00:35:23.099

Looking down from above,

784

00:35:23.099 --> 00:35:28.019

it was like 12 million people were buried under cement.

785

00:35:28.019 --> 00:35:30.500

Lignite itself doesn't necessarily have to be dirty.

786

00:35:30.500 --> 00:35:32.579

Germany also uses it.

787

00:35:32.579 --> 00:35:35.539

But they clean it to improve its quality.

788

00:35:35.539 --> 00:35:37.059

Coal can be made clean.

789

00:35:37.059 --> 00:35:40.059

More than 95% of the coal in England is washed.

790

00:35:40.059 --> 00:35:42.420

So how much do we wash in China?

791

00:35:42.420 --> 00:35:46.019

We only wash less than half of our coal.

792

00:35:46.019 --> 00:35:50.179

The remaining several hundred million tons are basically useless

793

00:35:50.179 --> 00:35:52.900

and has the highly toxic and wasteful substance called ash.

794

00:35:52.900 --> 00:35:56.380

All over the world, we transport it using trucks and trains

795

00:35:56.380 --> 00:35:58.579

and then put it into coal stoves to be burnt.

796

00:35:58.579 --> 00:36:00.579

It's utterly useless.

797

00:36:00.579 --> 00:36:02.099

Here are the consequences.

798

00:36:02.099 --> 00:36:05.300

Most lignite is burned by ordinary citizens.

799

00:36:05.300 --> 00:36:08.659

Even though only 1/4 of city dwellers in China burn lignite at home

800

00:36:09.500 --> 00:36:11.699

and their coal consumption is only 20%,

801

00:36:11.699 --> 00:36:13.780
the emissions of sulfur dioxide

802
00:36:14.420 --> 00:36:17.539
are equivalent to the emissions from
all the power plants put together.

803
00:36:17.539 --> 00:36:19.460
It's that bad.

804
00:36:19.460 --> 00:36:22.460
And most frightening is it's highly toxic.

805
00:36:22.460 --> 00:36:28.179
In Beijing, PM2.5 is far more toxic
in winter than it is in summer.

806
00:36:28.179 --> 00:36:31.059
The carcinogen content is 25 times more in the winter.

807
00:36:31.059 --> 00:36:32.340
Why is it this high?

808
00:36:32.340 --> 00:36:35.260
One of the main reasons is
because we are burning lignite

809
00:36:35.260 --> 00:36:37.420
which emits high levels of carcinogens when burned.

810
00:36:38.659 --> 00:36:39.820
For decades,

811
00:36:39.820 --> 00:36:42.820
the Chinese public has been bearing the
consequences from burning poor quality coal.

812
00:36:43.139 --> 00:36:45.280
In Yunnan's Xuanwei County,
there is a town called Hutou

813
00:36:45.280 --> 00:36:47.000

It now has the highest incidence rate of lung cancer

814

00:36:47.000 --> 00:36:48.980
anywhere in the world because
it burns poor quality coal.

815

00:36:52.019 --> 00:36:53.980
This is a patient with late stage lung cancer.

816

00:36:53.980 --> 00:36:55.619
He was coughing up blood.

817

00:36:55.619 --> 00:36:58.500
He had no energy to shoo away the flies

818

00:36:58.500 --> 00:37:02.340
so he asked someone to stick flypaper to his body.

819

00:37:05.340 --> 00:37:06.619
Here's a photograph of that old man

820

00:37:06.619 --> 00:37:10.340
surrounded by loved ones whose lives
were taken by lung cancer over the years.

821

00:37:13.019 --> 00:37:15.539
Some entire families have disappeared.

822

00:37:17.019 --> 00:37:19.860
We keep hearing that China is
still a developing country

823

00:37:19.860 --> 00:37:21.659
and environmental protection
is a luxury not afforded to us.

824

00:37:22.659 --> 00:37:26.179
But more often than not, the people most
effected by pollution are the poorest.

825

00:37:26.179 --> 00:37:28.260
They are most likely to be harmed.

826

00:37:28.260 --> 00:37:30.300

They are in most need of having a voice.

827

00:37:30.300 --> 00:37:31.900

They are in most need of help.

828

00:37:32.940 --> 00:37:35.940

In recent years, our heavy reliance on coal consumption

829

00:37:35.940 --> 00:37:37.739

has resulted in more and more
poor quality coal being used.

830

00:37:37.739 --> 00:37:39.219

This coal isn't cleaned

831

00:37:39.219 --> 00:37:40.820

and emissions aren't properly controlled.

832

00:37:40.820 --> 00:37:42.300

This is the result.

833

00:37:43.179 --> 00:37:46.019

In China, places with high rates of coal consumption

834

00:37:46.019 --> 00:37:49.219

also have higher concentrations of PM2.5.

835

00:37:49.260 --> 00:37:51.519

Cleaning the coal is the simplest
way to fix the environment.

836

00:37:51.519 --> 00:37:53.820

We must reduce consumption to less than 2 billion tons.

837

00:37:53.820 --> 00:37:55.380

This guarantees blue skies.

838

00:37:55.380 --> 00:37:56.699

If we can't reach that point,

839
00:37:56.699 --> 00:37:58.699
we can try to concentrate coal burning to reduce dust

840
00:37:58.699 --> 00:38:00.820
and focus on generating electricity instead.

841
00:38:00.820 --> 00:38:03.780
But if we still can't accomplish this,

842
00:38:03.780 --> 00:38:06.179
we at least need to wash the poor quality coal.

843
00:38:06.179 --> 00:38:08.860
If we could wash all that coal,
what would happen to emissions?

844
00:38:08.860 --> 00:38:10.300
Cut in half at the very least.

845
00:38:10.300 --> 00:38:12.139
There are two ways to change the current situation.

846
00:38:12.139 --> 00:38:14.219
Reduce coal consumption

847
00:38:14.219 --> 00:38:15.360
or clean the coal.

848
00:38:25.420 --> 00:38:29.500
In 2014, annual PM2.5 concentration levels
dropped 11.1% in 74 major cities.

849
00:38:30.500 --> 00:38:33.119
However, only 8 cities met national standards.

850
00:38:33.119 --> 00:38:36.139
If we could follow the current
environmental protection laws,

851
00:38:36.139 --> 00:38:37.860

if we could abide by them perfectly,

852

00:38:37.860 --> 00:38:42.219

dust and sulfur dioxide emissions would drop by 60%.

853

00:38:42.219 --> 00:38:44.579

Nitrogen oxide emissions would drop by 35%.

854

00:38:44.579 --> 00:38:46.739

In order to clean up China's pollution,

855

00:38:46.739 --> 00:38:48.460

first we need better management.

856

00:38:48.460 --> 00:38:50.460

Second, we need better management.

857

00:38:50.460 --> 00:38:52.579

And third, we need better management.

858

00:38:52.579 --> 00:38:53.739

Xi Jinping says:

859

00:38:53.739 --> 00:38:56.860

"The dignity of law lies in its execution."

860

00:38:56.860 --> 00:38:57.980

China took only 30 years

861

00:38:57.980 --> 00:39:00.860

to finish an industrialization process
that took other countries a century.

862

00:39:00.860 --> 00:39:02.940

So in addition to pollution from coal,

863

00:39:02.940 --> 00:39:05.659

we must still account for pollution from oil.

864

00:39:05.659 --> 00:39:07.699

So how about our oil?

865
00:39:07.699 --> 00:39:09.460
The vast majority is burned by automobiles.

866
00:39:09.460 --> 00:39:13.139
In ten years, the number of cars in China
has increased by about 100 million.

867
00:39:13.139 --> 00:39:15.500
And in Beijing in 2010,

868
00:39:15.500 --> 00:39:17.659
how many cars were added in that one year?

869
00:39:17.659 --> 00:39:18.619
800,000.

870
00:39:18.619 --> 00:39:19.659
How can we conceptualize that number?

871
00:39:19.659 --> 00:39:22.900
Take all those cars and place them end-to-end.

872
00:39:22.900 --> 00:39:25.260
They would stretch from Beijing to
Shenzhen and then back to Beijing again.

873
00:39:25.260 --> 00:39:27.780
That's just in one year.

874
00:39:27.780 --> 00:39:29.539
Here's what that means.

875
00:39:29.539 --> 00:39:34.860
Motorized vehicles are the largest
sources of Beijing's localized pollution.

876
00:39:34.860 --> 00:39:36.539
There was another city that surprised me.

877
00:39:36.539 --> 00:39:40.260

"This city's annual number of polluted days is more than 200."

878

00:39:41.940 --> 00:39:43.940

Can you guess which city that is?

879

00:39:46.900 --> 00:39:48.219

Which one?

880

00:39:51.940 --> 00:39:53.860

Take another look.

881

00:39:53.860 --> 00:39:55.420

Qinghai?

882

00:39:55.420 --> 00:39:58.099

Qingdao?

883

00:39:58.099 --> 00:40:00.500

It's Hangzhou.

884

00:40:00.500 --> 00:40:01.980

Honestly, I was as surprised as you are

885

00:40:01.980 --> 00:40:06.139

because I always thought the fog was just the misty rain written about in Chinese classical poetry.

886

00:40:06.139 --> 00:40:08.099

Afterwards, I asked Hangzhou's Environmental Protection Bureau.

887

00:40:08.099 --> 00:40:09.219

They said it's because

888

00:40:09.219 --> 00:40:12.420

Hangzhou has the highest per person automobile ownership in China,

889

00:40:12.420 --> 00:40:14.539

an average of one car per every two people.

890

00:40:14.539 --> 00:40:17.699

Therefore, 40% of Hangzhou's pollution is from motorized vehicles.

891

00:40:17.699 --> 00:40:20.820

So then more cars lead to pollution?

892

00:40:20.820 --> 00:40:22.059

Everyone has heard this question.

893

00:40:22.059 --> 00:40:23.739

Aren't there more cars in Tokyo than in Beijing?

894

00:40:23.739 --> 00:40:26.780

Why don't we see severe pollution there?

895

00:40:26.780 --> 00:40:29.579

Beijing Municipal Commission of Transport gave me this explanation.

896

00:40:29.579 --> 00:40:33.260

More than 90% of Tokyo residents take rapid transport.

897

00:40:33.260 --> 00:40:35.579

Less than 6% drive cars.

898

00:40:35.579 --> 00:40:37.219

And Beijing?

899

00:40:37.219 --> 00:40:39.019

34% of Beijing residents drive cars.

900

00:40:39.019 --> 00:40:41.579

And it's basically jammed like this in the city center.

901

00:40:41.579 --> 00:40:43.940

Cars emit twice as much exhaust when they are idle in traffic.

902

00:40:43.940 --> 00:40:46.300

Step on the brakes and heavy metal emissions rise.

903
00:40:46.300 --> 00:40:48.659
So every day during rush hour in Beijing,

904
00:40:48.659 --> 00:40:52.900
how much PM2.5 is emitted
per hour within the 6th Ring Road?

905
00:40:52.900 --> 00:40:53.619
One ton.

906
00:40:54.500 --> 00:40:57.340
How many Beijingers choose to drive
if they are going somewhere within 5 km?

907
00:40:59.059 --> 00:41:00.500
Almost half.

908
00:41:00.500 --> 00:41:05.260
In addition, 12% choose to drive
if their destination is within 2 km.

909
00:41:05.260 --> 00:41:07.980
And 7% said they'd drive if it were within 1 km.

910
00:41:07.980 --> 00:41:09.059
How far is 1 km?

911
00:41:09.059 --> 00:41:12.300
It's a trip to the neighborhood supermarket.

912
00:41:12.300 --> 00:41:14.699
That's how much we love to drive?

913
00:41:14.699 --> 00:41:16.380
Perhaps a few of us may,

914
00:41:16.380 --> 00:41:18.739
but there can't be that many irrational people, right?

915
00:41:18.739 --> 00:41:20.260

My family owns a car,

916

00:41:20.260 --> 00:41:21.900
but after my daughter was born
we agreed to only use it for

917

00:41:21.900 --> 00:41:23.579
our parents and our daughter,

918

00:41:23.579 --> 00:41:24.699
or trips to the airport or hospital.

919

00:41:24.699 --> 00:41:28.139
My husband commutes to work every day by bicycle.

920

00:41:28.139 --> 00:41:30.500
This is what it looks like riding a bike
in front of our building.

921

00:41:32.219 --> 00:41:33.579
That's how you ride.

922

00:41:33.579 --> 00:41:35.539
Why?

923

00:41:35.539 --> 00:41:37.340
This is our bike lane.

924

00:41:37.340 --> 00:41:40.019
It's packed with cars almost every single day.

925

00:41:40.019 --> 00:41:43.300
Beijing has over 5 million cars but only
half the number of parking spaces.

926

00:41:43.300 --> 00:41:44.780
Where else are they going to park?

927

00:41:44.780 --> 00:41:47.860
So that's why they clog the bike lane or the sidewalk.

928

00:41:47.860 --> 00:41:49.460
That's where they park.

929
00:41:49.460 --> 00:41:51.539
Of course, human behavior is
the similar across the world.

930
00:41:51.539 --> 00:41:53.139
Without regulations, this can happen anywhere.

931
00:41:53.139 --> 00:41:54.900
Let's look at London.

932
00:41:54.900 --> 00:41:56.860
Looks like Londoners parked this way back then too.

933
00:41:56.860 --> 00:42:01.539
The city later installed parking meters
and this was how they parked.

934
00:42:01.539 --> 00:42:04.579
Then the city raised parking fees
and added a congestion charge

935
00:42:04.579 --> 00:42:06.059
and this was the result.

936
00:42:06.059 --> 00:42:07.699
A few days ago, I heard Shenzhen was trying this.

937
00:42:07.699 --> 00:42:10.219
They began charging higher parking fees.

938
00:42:10.219 --> 00:42:15.300
And this is how people parked.

939
00:42:15.300 --> 00:42:16.980
Tokyo did the same thing 50 years ago.

940
00:42:16.980 --> 00:42:17.900
It's not that easy.

941

00:42:17.900 --> 00:42:21.059

They took a long time to
gradually clear out all the cars.

942

00:42:21.059 --> 00:42:23.980

It's a test of thorough city management.

943

00:42:23.980 --> 00:42:26.179

People who love to drive have another question.

944

00:42:26.179 --> 00:42:28.139

As you can see in this photo,

945

00:42:28.139 --> 00:42:31.179

there are no cars during the
middle of the night in Beijing, right?

946

00:42:31.179 --> 00:42:33.579

Then why is the pollution still so bad?

947

00:42:33.579 --> 00:42:36.179

Is that really caused by my car?

948

00:42:36.219 --> 00:42:37.539

I was also puzzled

949

00:42:37.539 --> 00:42:39.500

until the Chinese Academy of Sciences
provided me with this chart.

950

00:42:41.980 --> 00:42:45.940

In Beijing, pollution levels reach
their peak every day before dawn.

951

00:42:45.940 --> 00:42:47.780

And this appears consistently every single day.

952

00:42:47.780 --> 00:42:51.659

At this level, carbon emissions are twice
as high as in the afternoon on the same day.

953

00:42:51.659 --> 00:42:53.780
So what exactly is causing this?

954
00:42:53.780 --> 00:42:56.340
I also wanted to know the answer
so I went to Yanqing, outside Beijing.

955
00:43:00.320 --> 00:43:01.280
Stop!

956
00:43:01.719 --> 00:43:04.280
Emissions Standards Label: China IV

957
00:43:05.679 --> 00:43:07.599
This truck doesn't meet the basic
configuration for China IV standards.

958
00:43:07.599 --> 00:43:09.280
So it's not actually a China IV vehicle.

959
00:43:09.280 --> 00:43:10.199
What can I do?

960
00:43:10.199 --> 00:43:11.480
The truck's brand new.

961
00:43:11.840 --> 00:43:13.280
There's my ecolabel.

962
00:43:13.280 --> 00:43:14.719
It was issued this year.

963
00:43:17.179 --> 00:43:18.659
Another random inspection.

964
00:43:19.059 --> 00:43:21.619
Emissions Standards Label: China III

965
00:43:21.739 --> 00:43:23.139
What does 3.29 mean?

966

00:43:23.139 --> 00:43:24.300

It's above the limit.

967

00:43:24.300 --> 00:43:25.539

This engine is from before China I was adopted.

968

00:43:25.539 --> 00:43:27.539

That means It doesn't have
any emissions control device?

969

00:43:27.539 --> 00:43:29.260

No, there's basically no emission control.

970

00:43:29.260 --> 00:43:30.019

He's got a green label.

971

00:43:30.500 --> 00:43:31.739

That's China III standard.

972

00:43:31.739 --> 00:43:32.380

Who issued it?

973

00:43:32.380 --> 00:43:35.099

Hebei Environmental Protection Bureau.

974

00:43:35.099 --> 00:43:36.539

They said it was China III when I bought it.

975

00:43:36.539 --> 00:43:38.639

How was I supposed to know? I'm just buying a truck.

976

00:43:39.179 --> 00:43:40.659

In the end, the driver wasn't fined.

977

00:43:41.780 --> 00:43:43.059

His truck can get through without inspection.

978

00:43:43.059 --> 00:43:44.619

It's transporting eggs, milk, and oil.

979

00:43:44.619 --> 00:43:45.980

It guarantees the city runs smoothly.

980

00:43:45.980 --> 00:43:49.920

So according to regulations, we don't fine him.

981

00:43:50.420 --> 00:43:52.179

Fake emission certificates are widespread,

982

00:43:52.179 --> 00:43:54.820

or to put it more seriously, they're everywhere.

983

00:43:54.820 --> 00:43:56.179

It's an open secret in the trucking industry.

984

00:43:56.179 --> 00:43:58.059

90% of the vehicles don't meet the
emission standards on their labels.

985

00:43:58.059 --> 00:43:59.579

So what does that mean in terms of emissions?

986

00:43:59.579 --> 00:44:04.000

30,000 noncompliant trucks entering Beijing at night
emit the equivalent of several million compliant ones.

987

00:44:06.219 --> 00:44:10.860

When there are no emission
control devices, what is the result?

988

00:44:10.860 --> 00:44:12.460

Take one non-compliant truck.

989

00:44:12.460 --> 00:44:17.460

Its particulate emissions are 500 times
the amount of a vehicle with China IV standards.

990

00:44:17.460 --> 00:44:19.139

The proportion of vehicles
using diesel fuel isn't that high.

991

00:44:19.139 --> 00:44:20.380
It's like the use of poor quality coal.

992
00:44:20.380 --> 00:44:22.619
They aren't many, only 17% of all vehicles.

993
00:44:22.619 --> 00:44:27.179
But their nitrogen oxide emissions
account for 70% of all vehicle emissions.

994
00:44:27.179 --> 00:44:30.019
And how about their primary particle emissions?

995
00:44:30.019 --> 00:44:31.980
99%.

996
00:44:31.980 --> 00:44:33.500
Even more frightening,

997
00:44:33.500 --> 00:44:38.260
diesel vehicles emit particulate matter
far more toxic than normal vehicles.

998
00:44:38.260 --> 00:44:40.239
Polycyclic Aromatic Hydrocarbons
(PAHs) are carcinogens.

999
00:44:40.239 --> 00:44:43.139
However diesel vehicles emit an upgraded version.

1000
00:44:43.139 --> 00:44:45.260
They're called Nitro-PAHs.

1001
00:44:45.260 --> 00:44:47.340
They are ten times more toxic than PAHs.

1002
00:44:47.340 --> 00:44:49.420
When I saw those diesel truck drivers in Yanqing,

1003
00:44:49.420 --> 00:44:53.300
it occurred to me that they are the
biggest victims of diesel exhaust.

1004

00:44:53.300 --> 00:44:55.940

They are at higher risks for cancer.

1005

00:44:55.940 --> 00:44:59.340

In addition, punishing them didn't seem to make sense.

1006

00:44:59.340 --> 00:45:01.539

They spent their own hard earned money

1007

00:45:01.539 --> 00:45:04.300

to buy trucks with legal certificates
issued by the government.

1008

00:45:04.300 --> 00:45:05.940

On what grounds should they be punished?

1009

00:45:05.940 --> 00:45:07.340

If someone should be held accountable,

1010

00:45:07.340 --> 00:45:10.380

shouldn't we start with those responsible
for counterfeiting the vehicles?

1011

00:45:10.500 --> 00:45:15.260

Can you explain why these vehicles weren't installed
with after-treatment emission controls?

1012

00:45:15.260 --> 00:45:15.820

Well...

1013

00:45:15.820 --> 00:45:17.539

Some cars are exported...

1014

00:45:17.539 --> 00:45:19.420

They're exported to Africa and other places.

1015

00:45:19.420 --> 00:45:20.659

They have standards over there too...

1016

00:45:20.820 --> 00:45:22.699

They have National 1, National 2....

1017

00:45:22.699 --> 00:45:24.300

Europe 1, Europe II, Europe 0.... (there's no Europe 0)

1018

00:45:24.539 --> 00:45:25.300

and some African ones...

1019

00:45:25.300 --> 00:45:27.940

But your car had a China IV ecolabel.

1020

00:45:28.699 --> 00:45:29.219

Uhh...

1021

00:45:29.219 --> 00:45:30.699

Maybe they were...

1022

00:45:30.699 --> 00:45:31.539

Exported...

1023

00:45:31.539 --> 00:45:32.579

For example, they were exported...

1024

00:45:32.579 --> 00:45:33.579

They were sold for export.

1025

00:45:34.579 --> 00:45:35.500

Uhh...

1026

00:45:35.619 --> 00:45:36.260

You mean you put on the wrong labels?

1027

00:45:36.260 --> 00:45:38.739

That's what happened.

You mean you put on the wrong labels?

1028

00:45:38.739 --> 00:45:40.420

You mean you put on the wrong labels?

1029

00:45:41.420 --> 00:45:41.900

Yeah...

1030

00:45:41.900 --> 00:45:42.420

Maybe they stuck...

1031

00:45:42.420 --> 00:45:43.420

Their own labels on...

1032

00:45:43.420 --> 00:45:45.300

Someone wanted the vehicles so we sold them..

1033

00:45:47.059 --> 00:45:49.380

I'm not so sure how our friends
in Africa would feel after hearing this.

1034

00:45:49.380 --> 00:45:52.940

Businesses clearly have their own
explanations and reasons for doing things.

1035

00:45:52.940 --> 00:45:54.900

But what makes me curious is

1036

00:45:54.900 --> 00:45:58.260

if widespread counterfeiting has
been happening for over a decade

1037

00:45:58.260 --> 00:45:59.579

and regulatory departments know it exists,

1038

00:45:59.579 --> 00:46:01.019

then why don't they deal with the problem?

1039

00:46:01.019 --> 00:46:02.500

Don't we have laws?

1040

00:46:02.500 --> 00:46:05.860

Don't we have regulations to recall defective vehicles?

1041

00:46:05.860 --> 00:46:07.780

We must be able to recall
those kind of products, right?

1042

00:46:07.780 --> 00:46:09.739
However, since 2004

1043
00:46:09.739 --> 00:46:13.219
how many times has that law been used for this purpose?

1044
00:46:13.219 --> 00:46:14.340
Not even once.

1045
00:46:14.340 --> 00:46:14.900
Why?

1046
00:46:15.260 --> 00:46:17.059
This is the answer I received.

1047
00:46:17.059 --> 00:46:23.500
Only if the automobile poses an unreasonable risk to
people or their property can it be recalled.

1048
00:46:23.500 --> 00:46:26.500
Carmakers say leaving out emission
control devices has nothing to do with safety.

1049
00:46:26.500 --> 00:46:28.019
It won't kill anyone.

1050
00:46:28.019 --> 00:46:30.579
So there's no basis for a recall.

1051
00:46:30.579 --> 00:46:33.139
Then do we have the authority to
fine them or make them destroy their vehicles?

1052
00:46:33.139 --> 00:46:33.980
We do.

1053
00:46:33.980 --> 00:46:35.820
This law stipulates it.

1054
00:46:35.820 --> 00:46:37.579
We can even order them to stop their illegal behavior,

1055

00:46:37.579 --> 00:46:39.579

impose fines, or confiscate and destroy the vehicles.

1056

00:46:39.579 --> 00:46:42.420

More than a decade has gone by
since this law was revised in 2000.

1057

00:46:42.420 --> 00:46:45.059

How many times has it been used?

1058

00:46:45.059 --> 00:46:47.780

Not even once.

1059

00:46:47.780 --> 00:46:48.659

Why?

1060

00:46:48.659 --> 00:46:50.179

This is the answer I received.

1061

00:46:50.179 --> 00:46:54.980

It must be ordered by the department exercising the
power of supervision and management.

1062

00:46:54.980 --> 00:46:59.139

Everyone says they have no
idea what department that is.

1063

00:46:59.139 --> 00:47:01.619

There are only a few departments dealing
with the supervision of motor vehicles

1064

00:47:01.619 --> 00:47:03.019

so I called them up one by one.

1065

00:47:03.019 --> 00:47:05.699

First, I called the Ministry of
Environmental Protection (MEP).

1066

00:47:05.699 --> 00:47:07.099

They said,

1067

00:47:07.099 --> 00:47:09.820
"As far as we know, it's not us."

1068
00:47:09.820 --> 00:47:11.539
Then I asked the Ministry of
Information and Technology.

1069
00:47:11.539 --> 00:47:14.739
They said, "It's absolutely not us."

1070
00:47:14.739 --> 00:47:16.300
So then I asked the Quality Inspection Bureau.

1071
00:47:16.300 --> 00:47:17.380
They said,

1072
00:47:17.380 --> 00:47:20.019
"It should be all three of us."

1073
00:47:20.019 --> 00:47:21.860
Now perhaps there's a reason for their confusion.

1074
00:47:21.860 --> 00:47:25.539
Why doesn't the law clarify who should be in charge?

1075
00:47:25.539 --> 00:47:29.019
So I had no choice but to ask the
National People's Congress (NPC).

1076
00:47:29.019 --> 00:47:30.980
Here's the answer they gave me.

1077
00:47:30.980 --> 00:47:34.820
"The law enforcement body is indeed unclear."

1078
00:47:34.820 --> 00:47:37.019
This situation doesn't come
up often in our legislation.

1079
00:47:37.019 --> 00:47:40.940
Why does it only appear in Article 53
of this particular law?

1080
00:47:40.940 --> 00:47:43.820
We asked the NPC why it was written like this.

1081
00:47:43.820 --> 00:47:44.900
Why not just say we're responsible?

1082
00:47:44.900 --> 00:47:48.739
They said that when they were writing
the law, many departments opposed it.

1083
00:47:48.739 --> 00:47:49.780
They didn't want the MEP in charge.

1084
00:47:49.780 --> 00:47:51.619
The law couldn't get through.

1085
00:47:51.619 --> 00:47:54.619
So in the end the NPC had to use
that vague language to pass it.

1086
00:47:54.619 --> 00:47:56.699
That's why it gives legal jurisdiction only to
departments with executive authority.

1087
00:47:56.699 --> 00:47:58.739
But it sounds like all three deal
with environmental protection.

1088
00:47:58.739 --> 00:48:00.260
But in reality, we can't control the issue.

1089
00:48:00.260 --> 00:48:01.300
Their certificates are all real

1090
00:48:01.300 --> 00:48:02.619
and so are all the vehicles.

1091
00:48:02.619 --> 00:48:05.179
Environmental protection agencies also
issue them labels with China IV standards.

1092

00:48:05.179 --> 00:48:07.219

But not a single agency goes
and checks the vehicles

1093

00:48:07.219 --> 00:48:08.820

when in fact, they're only
up to China I standards.

1094

00:48:08.820 --> 00:48:11.099

But if you say the MEP has legal jurisdiction,
no one can refute that.

1095

00:48:11.099 --> 00:48:12.019

So why not just enforce the law?

1096

00:48:12.019 --> 00:48:14.699

Of course, the MEP has been
suspected of neglect.

1097

00:48:14.699 --> 00:48:15.300

I'll admit that.

1098

00:48:15.300 --> 00:48:17.500

We never pursued the problem further.

1099

00:48:17.500 --> 00:48:20.380

So your law enforcement authority is still
completely toothless after all these years?

1100

00:48:20.380 --> 00:48:22.019

I don't even open my mouth these days.

1101

00:48:22.019 --> 00:48:23.420

I'm afraid people will see I don't have any left.

1102

00:48:23.420 --> 00:48:24.440

You can see the awkward situation we're in.

1103

00:48:26.679 --> 00:48:28.079

They're not the only ones in an awkward situation.

1104

00:48:28.079 --> 00:48:29.440
So are the automakers.

1105
00:48:29.440 --> 00:48:31.679
The executive from that company
producing fake vehicles told me

1106
00:48:31.679 --> 00:48:34.119
"If the MEP enforced this law,

1107
00:48:34.119 --> 00:48:35.599
if they seized the counterfeit vehicles,

1108
00:48:35.599 --> 00:48:37.280
I guarantee we'd start complying the next day.

1109
00:48:38.000 --> 00:48:40.079
Otherwise, if we start complying and
other companies continue counterfeiting,

1110
00:48:40.079 --> 00:48:41.519
we'd be bankrupt tomorrow."

1111
00:48:41.519 --> 00:48:42.400
So I asked Ding Yan

1112
00:48:42.400 --> 00:48:44.360
did he think what the automaker said made sense.

1113
00:48:44.360 --> 00:48:45.440
He said it did.

1114
00:48:45.440 --> 00:48:48.199
Not enforcing the law forces people to take shortcuts.

1115
00:48:49.199 --> 00:48:50.840
The automakers had another argument.

1116
00:48:50.840 --> 00:48:55.159
They said, "The China IV Standard was implemented in
2010 so all automakers upgraded their vehicles,

1117
00:48:55.159 --> 00:48:57.639
but the compliant fuel supply was slow to arrive."

1118
00:48:57.639 --> 00:49:00.199
And when it eventually did,
the quality wasn't up to standards.

1119
00:49:00.199 --> 00:49:01.679
When we were in Yanqing, we
randomly inspected this diesel truck.

1120
00:49:01.679 --> 00:49:04.360
When we were in Yanqing, we
randomly inspected this diesel truck.

1121
00:49:04.360 --> 00:49:06.000
The diesel fuel came from Beijing.

1122
00:49:06.000 --> 00:49:08.760
Beijing has China's highest diesel fuel quality
standards so it should have been good.

1123
00:49:08.760 --> 00:49:10.760
But after we tested the truck's fuel,

1124
00:49:10.760 --> 00:49:14.400
its sulfur content was 25 times higher than EU,
Japanese, and American standards.

1125
00:49:14.400 --> 00:49:15.920
That's diesel fuel,

1126
00:49:15.920 --> 00:49:18.679
but what about the quality of our gasoline?

1127
00:49:18.679 --> 00:49:21.800
This table came from the Chinese Research
Academy of Environmental Sciences (CRAES).

1128
00:49:21.800 --> 00:49:23.880
It pains me every time I look at it,

1129

00:49:23.880 --> 00:49:25.840
because I can't understand it at all.

1130

00:49:25.840 --> 00:49:27.559
Fortunately, they summed it up for me.

1131

00:49:27.559 --> 00:49:32.159
China's gasoline quality standard is usually 2 to 3
grades lower than other developed countries'.

1132

00:49:32.159 --> 00:49:33.599
If we can raise the quality by just 1 grade,

1133

00:49:33.599 --> 00:49:35.440
we can cut emissions by 10%.

1134

00:49:35.440 --> 00:49:37.159
It seems like China should have good fuel.

1135

00:49:37.159 --> 00:49:38.679
We have oil compliant with
China IV and above standards.

1136

00:49:38.679 --> 00:49:41.280
But in fact, this fuel only
accounts for 3% of China's total.

1137

00:49:41.280 --> 00:49:43.119
This is exactly Hangzhou's problem.

1138

00:49:43.119 --> 00:49:44.480
Hangzhou is a rich city.

1139

00:49:44.480 --> 00:49:45.679
They want to buy high quality fuel,

1140

00:49:45.679 --> 00:49:47.880
but until 2013 there wasn't any available.

1141

00:49:47.880 --> 00:49:49.280
No matter how much you tried,

1142

00:49:49.280 --> 00:49:51.519

you could only find fuel
compliant with China III Standards.

1143

00:49:51.519 --> 00:49:52.599

Even in Beijing,

1144

00:49:52.599 --> 00:49:56.360

it looks like the sulfur content has dropped
in line with EU and American standards.

1145

00:49:56.360 --> 00:49:58.519

But if you look again at the bottom four items.

1146

00:49:58.519 --> 00:50:02.559

That jumble of data contains a hidden danger.

1147

00:50:02.559 --> 00:50:05.280

Either it means an increase in atmospheric oxidant
levels forming more fine particulate matter,

1148

00:50:05.280 --> 00:50:06.760

or it means more toxicity.

1149

00:50:06.760 --> 00:50:09.000

That last item, increased vapor pressure,

1150

00:50:09.000 --> 00:50:12.079

means an increase in the rate at which
gasoline evaporates into the atmosphere.

1151

00:50:12.079 --> 00:50:14.840

At first, I thought can gasoline
really evaporate that much?

1152

00:50:14.840 --> 00:50:17.920

Then an expert from CRAES told me to watch this video.

1153

00:50:17.920 --> 00:50:19.920

This was filmed with an infrared camera.

1154

00:50:19.920 --> 00:50:22.519

If gas stations don't install vapor recovery nozzles,

1155

00:50:22.519 --> 00:50:24.760

this is how much can evaporate.

1156

00:50:24.760 --> 00:50:27.519

Almost 1.5 grams per every 1 liter of fuel

1157

00:50:27.519 --> 00:50:28.760

is released into the atmosphere.

1158

00:50:28.760 --> 00:50:30.440

In addition, gasoline inside our cars' fuel tanks

1159

00:50:30.440 --> 00:50:32.400

also evaporates like this.

1160

00:50:32.400 --> 00:50:33.880

How intense is this evaporation?

1161

00:50:33.880 --> 00:50:35.280

Well in Beijing,

1162

00:50:35.280 --> 00:50:43.320

there are higher emissions of hydrocarbons
released due to evaporation then from car exhaust.

1163

00:50:43.320 --> 00:50:46.760

And these substances are major components of PM2.5.

1164

00:50:46.760 --> 00:50:50.239

So then why don't we clean up the fuel right away?

1165

00:50:50.239 --> 00:50:53.920

This is the oil industry's answer.

1166

00:50:53.920 --> 00:50:56.559

"National standards aren't high enough."

1167

00:50:56.559 --> 00:50:58.519
This argument seems to be reasonable.

1168
00:50:58.519 --> 00:51:02.519
You can't demand the industry to produce
oil cleaner than the country's standards, right?

1169
00:51:02.519 --> 00:51:07.360
So I asked people from the MEP and CRAES who were
involved with formulating the fuel standards,

1170
00:51:07.360 --> 00:51:09.480
"Why didn't you set them higher?"

1171
00:51:09.480 --> 00:51:10.500
This is the answer I received.

1172
00:51:10.500 --> 00:51:12.679
The smaller subcommittee

1173
00:51:12.679 --> 00:51:14.400
Most of the members, yeah most,

1174
00:51:14.400 --> 00:51:15.800
were from the oil industry.

1175
00:51:15.800 --> 00:51:18.480
I'd say around 2/3 of the members.

1176
00:51:18.480 --> 00:51:20.199
The larger subcommittee

1177
00:51:20.199 --> 00:51:21.280
had even more.

1178
00:51:21.280 --> 00:51:23.880
More than 90%, I recall,
were people from that industry.

1179
00:51:23.880 --> 00:51:26.199
The secretary of the standards
committee was also from the oil industry.

1180

00:51:26.199 --> 00:51:28.440

What about the head of the committee?

1181

00:51:28.440 --> 00:51:29.960

Also in the oil industry.

1182

00:51:29.960 --> 00:51:33.079

I thought the environmental protection groups had veto power.

1183

00:51:34.239 --> 00:51:35.679

You'd think so, right?

1184

00:51:35.679 --> 00:51:36.880

We are protecting the environment.

1185

00:51:37.679 --> 00:51:41.639

Yue Xin's smirk left a deep impression on me.

1186

00:51:41.639 --> 00:51:43.599

He told me, "The only time I felt like I existed

1187

00:51:43.599 --> 00:51:46.840

was when I walked in and wrote my name down on the sign-in sheet."

1188

00:51:46.840 --> 00:51:49.159

I didn't even have a vote."

1189

00:51:49.159 --> 00:51:52.280

He said he and his colleagues tried at all costs to push for upgraded fuel quality,

1190

00:51:52.280 --> 00:51:55.320

but the petrochemical industry people gave this excuse.

1191

00:51:55.320 --> 00:51:58.639

"Most of our oil is imported from the Middle East, right?"

1192

00:51:58.639 --> 00:52:01.440
So for example, most oil from Iran is sour crude oil."

1193
00:52:01.440 --> 00:52:06.440
Tehran is also suffering from the problems
brought on by using poor quality oil.

1194
00:52:06.440 --> 00:52:08.320
The smog is very thick.

1195
00:52:08.320 --> 00:52:09.480
But Iran's problem is

1196
00:52:09.480 --> 00:52:12.000
they don't have the technology to upgrade oil.

1197
00:52:12.000 --> 00:52:14.800
China's companies do have this technology.

1198
00:52:14.800 --> 00:52:16.400
Along what line do the government and industry split?

1199
00:52:16.400 --> 00:52:18.079
That of money.

1200
00:52:18.079 --> 00:52:19.400
When standards increased from China III to China IV,

1201
00:52:19.400 --> 00:52:22.920
the MEP said 1¢ per 1 liter would be sufficient.

1202
00:52:22.920 --> 00:52:23.920
The oil industry disagreed.

1203
00:52:23.920 --> 00:52:25.400
They needed 8¢.

1204
00:52:25.400 --> 00:52:28.559
I asked, "If both sides spread out the cost,
how much would it really cost?"

1205

00:52:28.559 --> 00:52:30.480
It's a simple thing."

1206
00:52:30.480 --> 00:52:31.960
He smiled and shook his head.

1207
00:52:31.960 --> 00:52:33.119
He said, "Don't talk to me."

1208
00:52:33.119 --> 00:52:34.559
Go ask the Ministry of Finance of the NDRC.

1209
00:52:34.559 --> 00:52:36.159
Then you'll understand."

1210
00:52:36.760 --> 00:52:37.800
They can't be controlled.

1211
00:52:37.800 --> 00:52:39.239
Let's say you have an only child.

1212
00:52:39.239 --> 00:52:40.559
And the kid starts following bad examples.

1213
00:52:40.559 --> 00:52:42.440
As his mother, what can you do?

1214
00:52:42.440 --> 00:52:44.119
All you can do is give him a good spanking.

1215
00:52:44.119 --> 00:52:45.880
Not everyday though.

1216
00:52:45.880 --> 00:52:48.519
Someone else has 10 kids, but not one misbehaves.

1217
00:52:48.519 --> 00:52:49.760
But they're right in front of you.

1218
00:52:49.760 --> 00:52:51.039
They completely ignore us.

1219

00:52:51.039 --> 00:52:52.219

Those vice-ministerial level units...

1220

00:52:52.219 --> 00:52:53.079

What can you do?

1221

00:52:53.079 --> 00:52:53.920

Will they listen to you?

1222

00:52:53.920 --> 00:52:55.559

If our Department of Price
doesn't raise prices this year,

1223

00:52:55.559 --> 00:52:56.400

they'll come and pressure us next year.

1224

00:52:56.400 --> 00:52:57.260

Are you gonna raise prices?

1225

00:52:57.260 --> 00:52:58.179

If not, we'll cut supplies.

1226

00:52:58.179 --> 00:52:58.780

Like that.

1227

00:53:01.800 --> 00:53:06.440

I didn't know if what the MEP and NDRC said was true,

1228

00:53:06.440 --> 00:53:07.480

if it had any basis.

1229

00:53:07.480 --> 00:53:08.599

I needed verification

1230

00:53:08.599 --> 00:53:11.599

so I reached out to Mr. Cao Xianghong,

1231

00:53:11.599 --> 00:53:15.880

head of the Oil Standards Committee
and former chief engineer of Sinopec.

1232

00:53:15.880 --> 00:53:18.760

I wanted to chat with him and ask him a few questions.

1233

00:53:18.760 --> 00:53:20.039

He agreed.

1234

00:53:22.340 --> 00:53:24.719

Question #1:

Why did the oil industry dictate the setting of fuel standards?

1235

00:53:24.719 --> 00:53:27.840

If a majority of members come from the petrochemical industry,

1236

00:53:27.840 --> 00:53:30.880

doesn't that damage public interest?

1237

00:53:30.880 --> 00:53:33.880

When organizing a committee to set standards for petroleum products,

1238

00:53:33.880 --> 00:53:37.840

you shouldn't be looking for people who don't understand oil refinery.

1239

00:53:37.840 --> 00:53:39.960

Environmental protection agencies doesn't understand oil refinery?

1240

00:53:39.960 --> 00:53:41.639

I don't believe they do.

1241

00:53:42.239 --> 00:53:44.360

Question #2:

Who should set the standards?

1242

00:53:44.360 --> 00:53:45.840

If you set the standard,

1243

00:53:45.840 --> 00:53:48.280

then when the time comes to
upgrade it, you say it's impossible,

1244

00:53:48.280 --> 00:53:50.239
and then when the deadline comes,
you can't provide the fuel.

1245

00:53:50.239 --> 00:53:52.119
And maybe you have
many reasons behind it,

1246

00:53:52.119 --> 00:53:53.880
but people won't be able to trust you.

1247

00:53:53.880 --> 00:53:55.679
But if Sinopec doesn't take the lead,

1248

00:53:55.679 --> 00:53:57.320
who else has the ability
to set the standards?

1249

00:53:57.320 --> 00:53:58.599
Well. for example, in some other countries...

1250

00:53:58.599 --> 00:54:00.519
First, their environmental protection agencies
have people who understand the industry.

1251

00:54:00.519 --> 00:54:01.239
Right.

1252

00:54:01.239 --> 00:54:03.440
Second, before submitting a draft,

1253

00:54:03.440 --> 00:54:09.159
they give people from the oil industry ample time to
engage with, look into, and debate the standards.

1254

00:54:09.159 --> 00:54:10.079
And ultimately,

1255

00:54:10.079 --> 00:54:12.280

their health and economic reports

1256

00:54:12.280 --> 00:54:13.920

are all provided to committee members.

1257

00:54:13.920 --> 00:54:17.000

Then everyone can discuss and
decide through an open process.

1258

00:54:17.000 --> 00:54:20.440

They also have opportunities to debate
and express their opinions with each other.

1259

00:54:20.440 --> 00:54:21.880

If it could be done in this way,

1260

00:54:21.880 --> 00:54:23.440

do you think you'd consider accepting that?

1261

00:54:23.440 --> 00:54:24.840

Yes, I could.

1262

00:54:24.840 --> 00:54:27.320

I've wanted to resign as Director of
the standards committee for a long time.

1263

00:54:27.320 --> 00:54:27.800

Really?

1264

00:54:27.800 --> 00:54:28.440

Really.

1265

00:54:28.440 --> 00:54:30.960

Outsiders say I'm biased towards Sinopec,

1266

00:54:30.960 --> 00:54:33.440

and Sinopec says I'm using
them while helping others.

1267

00:54:33.440 --> 00:54:34.679

I'm stuck in the middle.

1268
00:54:35.239 --> 00:54:37.360
Question #3:
Why don't you publicize upgrade costs?

1269
00:54:37.360 --> 00:54:41.199
Can you take all of your costs,
no matter input or upgrade costs,

1270
00:54:41.199 --> 00:54:42.119
and show them to the public?

1271
00:54:42.119 --> 00:54:46.599
Nowadays in society, there is
a natural sense of distrust

1272
00:54:46.599 --> 00:54:48.679
towards companies like Sinopec
and China National Petroleum.

1273
00:54:48.679 --> 00:54:50.039
Do you think this mistrust is...

1274
00:54:50.039 --> 00:54:51.639
Many don't engage in rational discussion.

1275
00:54:51.639 --> 00:54:54.039
They want to blow every
little flaw out of proportion.

1276
00:54:54.039 --> 00:54:55.800
It'll only make matters worse.

1277
00:54:55.800 --> 00:54:57.199
It's better to just not say anything.

1278
00:54:57.760 --> 00:55:00.079
Question #4:
By raising the standards, can we
force an upgrade in fuel quality?

1279
00:55:00.079 --> 00:55:02.920
Many ask why we don't raise standards

1280
00:55:02.920 --> 00:55:05.920
and force an upgrade of fuel standards?

1281
00:55:05.920 --> 00:55:08.440
If there was a shortage of fuel supply,

1282
00:55:08.440 --> 00:55:11.360
that could give way to social
instability and lead to unrest.

1283
00:55:11.360 --> 00:55:14.880
Then would it be possible to open up
the oil market from top to bottom?

1284
00:55:14.880 --> 00:55:17.079
Wouldn't that prevent the possibility
of a fuel supply shortage?

1285
00:55:17.079 --> 00:55:19.519
Done wrong, it could be a disaster.

1286
00:55:19.519 --> 00:55:21.880
Not every guy on the street
can run a oil company.

1287
00:55:21.880 --> 00:55:24.880
Well he may wonder why only Sinopec and
China National Petroleum can make money.

1288
00:55:24.880 --> 00:55:26.199
Everyone has the right to earn money.

1289
00:55:26.199 --> 00:55:27.679
Of course they do

1290
00:55:27.679 --> 00:55:32.199
so I agree with deep reaching reform
and gradual opening of the market.

1291
00:55:32.199 --> 00:55:34.880
If the government decides to go ahead

and push forward with this kind of reform,

1292

00:55:34.880 --> 00:55:36.280

then they need to conduct research

1293

00:55:36.280 --> 00:55:38.000

and figure out what the risks are.

1294

00:55:38.400 --> 00:55:41.159

Question #5:

Can large oil companies assume more social responsibility?

1295

00:55:41.159 --> 00:55:45.639

Sinopec is currently listed on the Fortune Global 500.

1296

00:55:45.639 --> 00:55:48.920

You just announced your revenue last year was 2 trillion RMB.

1297

00:55:48.920 --> 00:55:52.360

So for a huge state owned enterprise such as yourself,

1298

00:55:52.360 --> 00:55:58.039

why aren't you able to start taking more social responsibility when it comes to environmental problems?

1299

00:56:00.440 --> 00:56:02.480

Sinopec is indeed huge.

1300

00:56:02.480 --> 00:56:04.280

But we're like a fat person.

1301

00:56:04.280 --> 00:56:05.880

All meat,

1302

00:56:05.880 --> 00:56:07.320

but no muscle.

1303

00:56:07.960 --> 00:56:10.119

Oil companies around the world

1304

00:56:10.119 --> 00:56:12.920

will try to protect their own business interests.

1305

00:56:12.920 --> 00:56:15.840

It's built into a corporation's DNA and
it's not altogether unjustifiable.

1306

00:56:15.840 --> 00:56:16.800

We really wanted to know,

1307

00:56:16.800 --> 00:56:19.039

in other countries, who sets the fuel standards.

1308

00:56:19.039 --> 00:56:22.639

This is our conclusion so far.

1309

00:56:22.639 --> 00:56:24.920

Australia, South Korea, Japan

1310

00:56:24.920 --> 00:56:26.480

Mexico, and Canada

1311

00:56:26.480 --> 00:56:28.960

all have environmental agencies
that guide the standards.

1312

00:56:28.960 --> 00:56:30.039

Even in the European Union,

1313

00:56:30.039 --> 00:56:31.679

where the European Committee for
Standardization sets the standards,

1314

00:56:31.679 --> 00:56:33.360

they listen to industry associations.

1315

00:56:33.360 --> 00:56:37.480

But there's never been a case where the oil
industry dominates the standards process.

1316

00:56:38.800 --> 00:56:43.719

Then why are fuel quality standards in China dictated by the petrochemical industry?

1317

00:56:43.719 --> 00:56:46.639

There are historical reasons behind each country's choice.

1318

00:56:46.639 --> 00:56:48.000

In the 1960s,

1319

00:56:48.000 --> 00:56:50.199

our country's oil supply was in dire straits.

1320

00:56:50.199 --> 00:56:51.760

Public buses on Chang'an Avenue

1321

00:56:51.760 --> 00:56:54.119

carried gasoline storage bags on their roofs to operate.

1322

00:56:54.119 --> 00:56:57.000

China was still decades away from considering environmental standards for fuel.

1323

00:56:57.000 --> 00:56:58.639

The MEP didn't exist

1324

00:56:58.639 --> 00:57:02.739

so responsibility for setting standards was given to the Research Institute of Petroleum Processing (RIPP)

1325

00:57:02.739 --> 00:57:04.239

under the Ministry of Petroleum Industry (MOPI).

1326

00:57:04.239 --> 00:57:05.159

In 1983,

1327

00:57:05.159 --> 00:57:07.480

state restructuring reforms dissolved the MOPI

1328

00:57:07.480 --> 00:57:10.079
and the RIPP was put under the control of Sinopec.

1329
00:57:10.079 --> 00:57:13.639
With that, government ministries handed over
their role as standard regulators to a corporation.

1330
00:57:13.639 --> 00:57:14.760
In 2005,

1331
00:57:14.760 --> 00:57:16.639
when the first National Petroleum
Standards Committee was established,

1332
00:57:16.639 --> 00:57:19.400
the oil industry naturally took on a leading role.

1333
00:57:19.400 --> 00:57:20.280
For the past decade,

1334
00:57:20.280 --> 00:57:21.840
China has been confronted with

1335
00:57:21.840 --> 00:57:24.239
a growing need for both fuel quantity and fuel quality,

1336
00:57:24.239 --> 00:57:27.519
Both challenges exist at a magnitude
the world has rarely seen.

1337
00:57:27.519 --> 00:57:28.559
As the Chinese economy develops,

1338
00:57:28.559 --> 00:57:30.119
environmental protection receives more attention.

1339
00:57:30.119 --> 00:57:33.400
As the public calls for improved fuel quality,

1340
00:57:33.400 --> 00:57:36.079
actual changes are occurring
within the standards committee.

1341

00:57:36.079 --> 00:57:38.920

And although members from the oil industry
still retain more than half of the seats,

1342

00:57:38.920 --> 00:57:40.840

the number of members from outside the industry

1343

00:57:40.840 --> 00:57:42.800

has increased slightly within the past two years.

1344

00:57:42.800 --> 00:57:45.039

They have also installed a voting system.

1345

00:57:45.039 --> 00:57:46.679

Ultimately, every country's standards for fuel quality

1346

00:57:46.679 --> 00:57:51.199

must come from finding the optimal balance between
economic development and environmental protection.

1347

00:57:51.199 --> 00:57:54.559

Future changes to China's standards
committee depend on this.

1348

00:57:58.280 --> 00:57:59.039

In China,

1349

00:57:59.039 --> 00:58:01.320

apart from our low fuel standards,

1350

00:58:01.320 --> 00:58:05.360

there is another issue that never even entered
my mind before starting out on this quest.

1351

00:58:05.360 --> 00:58:09.719

That is, half of our oil is completely out of control.

1352

00:58:09.719 --> 00:58:13.800

Seven of the world's ten largest ports are in China.

1353

00:58:13.800 --> 00:58:16.639
Ocean-going freighters cause so much pollution.

1354
00:58:16.639 --> 00:58:18.719
that within 400 meters of the coastline,

1355
00:58:18.719 --> 00:58:21.880
they emit the equivalent of
500,000 semi-trailer trucks.

1356
00:58:21.880 --> 00:58:26.360
So 60% of sulfur dioxide in Shenzhen comes from ships.

1357
00:58:26.360 --> 00:58:27.719
Perhaps you don't live near a harbor,

1358
00:58:27.719 --> 00:58:29.800
but instead you live along a river.

1359
00:58:29.800 --> 00:58:31.760
More than 200,000 of these kind of boats in China

1360
00:58:31.760 --> 00:58:35.039
burn heavy oil of the worst quality.

1361
00:58:35.039 --> 00:58:36.519
How much do they pollute?

1362
00:58:36.519 --> 00:58:38.480
It's so bad that on some piers,

1363
00:58:38.480 --> 00:58:39.880
you can even scoop up the ash with your hands.

1364
00:58:39.880 --> 00:58:42.360
There's also the possibility you live near an airport.

1365
00:58:42.360 --> 00:58:43.440
When a plane takes off,

1366
00:58:43.440 --> 00:58:44.719

it uses one ton of fuel.

1367

00:58:44.719 --> 00:58:45.480

When it lands,

1368

00:58:45.480 --> 00:58:46.920

also one ton of fuel.

1369

00:58:46.920 --> 00:58:48.480

So at Guangzhou's Baiyun Airport,

1370

00:58:48.480 --> 00:58:50.019

daily emissions are equal to emissions
from 600,000 taxi cabs.

1371

00:58:50.019 --> 00:58:51.699

Perhaps you don't live near a harbor,

1372

00:58:51.699 --> 00:58:53.019

or a river,

1373

00:58:53.019 --> 00:58:54.139

or an airport.

1374

00:58:54.139 --> 00:58:56.460

But you've definitely come across these trucks.

1375

00:58:56.460 --> 00:58:58.619

These are heavy duty construction vehicles.

1376

00:58:58.619 --> 00:59:00.420

Once in Hebei, I saw one in front of me,

1377

00:59:00.420 --> 00:59:02.420

and I thought something had caught on fire.

1378

00:59:02.420 --> 00:59:03.699

Once I passed the truck,

1379

00:59:03.699 --> 00:59:05.179

I realized it was actually emitting that black smoke.

1380

00:59:05.179 --> 00:59:08.179

We followed it entering a village.

1381

00:59:08.179 --> 00:59:10.460

The entrance of the village looked like this.

1382

00:59:10.460 --> 00:59:12.139

Inside this small room,

1383

00:59:12.139 --> 00:59:15.579

villagers were playing mahjong
and selling lottery tickets.

1384

00:59:15.579 --> 00:59:17.860

They were also selling diesel oil and peat.

1385

00:59:17.860 --> 00:59:20.059

I had no idea where this diesel had come from.

1386

00:59:20.059 --> 00:59:22.059

We were with some MEP officials at the time

1387

00:59:22.059 --> 00:59:25.659

so they suggested we should investigate.

1388

00:59:25.659 --> 00:59:28.139

They bought a diesel oil can off the shelf.

1389

00:59:28.139 --> 00:59:31.260

and then went to the nearest privately run gas station.

1390

00:59:31.260 --> 00:59:33.739

I was the last one out of the car and by that time,

1391

00:59:33.739 --> 00:59:36.139

the MEP official's ID had been snatched
away by the owner of the gas station.

1392

00:59:36.579 --> 00:59:37.260

You...

1393

00:59:37.260 --> 00:59:38.780

What are you doing?

1394

00:59:38.780 --> 00:59:39.820

Hey!

1395

00:59:39.820 --> 00:59:40.820

I'm not giving it back.

1396

00:59:40.820 --> 00:59:41.340

What do you want?

1397

00:59:41.340 --> 00:59:42.739

We're from the Environment Protection Bureau (EPB).

1398

00:59:42.739 --> 00:59:44.500

What do you want?

1399

00:59:44.500 --> 00:59:45.340

This is a random inspection.

1400

00:59:45.340 --> 00:59:45.900

An inspection?

1401

00:59:45.900 --> 00:59:46.860

For what?

1402

00:59:46.860 --> 00:59:47.380

No.

1403

00:59:47.380 --> 00:59:48.739

What authority do you have to take samples?

1404

00:59:48.739 --> 00:59:50.019

Do you have authority?

1405

00:59:50.019 --> 00:59:51.099

We're going to run a test.

1406

00:59:51.099 --> 00:59:51.539
No!

1407
00:59:51.539 --> 00:59:52.420
The EPB has the authority?

1408
00:59:52.420 --> 00:59:53.380
Yes!

1409
00:59:53.380 --> 00:59:54.699
Of course we have the authority to inspect oil quality.

1410
00:59:54.699 --> 00:59:55.460
No, the Technology Supervision Bureau...

1411
00:59:55.460 --> 00:59:56.579
The Quality Supervision Bureau under the...

1412
00:59:56.579 --> 00:59:57.500
Administration for Industry and
Commerce has the authority.

1413
00:59:57.500 --> 00:59:58.619
We also have the authority.

1414
00:59:58.619 --> 00:59:59.059
The EPB?

1415
00:59:59.059 --> 01:00:00.139
That's the first I've heard.

1416
01:00:00.139 --> 01:00:00.699
Why does the EPB care?

1417
01:00:00.900 --> 01:00:01.699
Fine.

1418
01:00:01.699 --> 01:00:03.300
Inspect the oil.

1419
01:00:03.300 --> 01:00:03.739

Take a sample.

1420

01:00:03.739 --> 01:00:04.139

We will.

1421

01:00:04.139 --> 01:00:04.539

Ok...

1422

01:00:04.539 --> 01:00:05.139

There's a...

1423

01:00:05.139 --> 01:00:06.300

Technology Supervision Bureau...

1424

01:00:06.300 --> 01:00:06.900

They...

1425

01:00:06.900 --> 01:00:08.619

There's the "Atmospheric Pollution Prevention Act"...

1426

01:00:08.619 --> 01:00:09.619

The what?

1427

01:00:09.619 --> 01:00:11.219

The MEP has the obligation and the authority...

1428

01:00:11.460 --> 01:00:14.699

Maybe you have the obligation,
but you don't have the authority.

1429

01:00:14.940 --> 01:00:16.980

After he finished that sentence,

1430

01:00:16.980 --> 01:00:18.659

we were all left speechless.

1431

01:00:18.659 --> 01:00:22.019

All we could was take our diesel oil can and leave.

1432

01:00:22.019 --> 01:00:24.300

His words were so resolute.

1433

01:00:24.300 --> 01:00:26.820

So let's run down what we learned about coal and oil.

1434

01:00:26.820 --> 01:00:29.500

We consume huge amounts of both;

1435

01:00:29.500 --> 01:00:32.539

Their quality is relatively poor;

1436

01:00:32.539 --> 01:00:33.940

We don't do enough to clean them;

1437

01:00:33.940 --> 01:00:36.940

We don't control their emissions.

1438

01:00:36.940 --> 01:00:39.219

I always wanted to know why.

1439

01:00:39.219 --> 01:00:40.739

That is until this gas station owner

1440

01:00:40.739 --> 01:00:43.579

inexplicably uttered a sentence that

1441

01:00:43.579 --> 01:00:45.260

explained things as they really are.

1442

01:00:51.320 --> 01:00:52.199

Less than half of the coal is washed.

1443

01:00:52.199 --> 01:00:53.039

There aren't any controls.

1444

01:00:53.039 --> 01:00:53.760

There aren't any standards.

1445

01:00:53.760 --> 01:00:54.880

There are no national regulations.

1446

01:00:54.880 --> 01:00:56.340
There are no added requirements
to start washing more coal.

1447
01:00:56.340 --> 01:00:56.800
How important is the steel industry in Hebei?

1448
01:00:56.800 --> 01:00:58.360
How important is the steel industry in Hebei?

1449
01:00:58.360 --> 01:01:01.559
It's at the level where you can't
just shut factories down.

1450
01:01:02.159 --> 01:01:04.840
So according to regulations, we don't fine him.

1451
01:01:04.840 --> 01:01:08.159
No punishment has been meted
out in 14 years? --No, not once.

1452
01:01:09.300 --> 01:01:10.800
Over 90% were from the oil industry.

1453
01:01:10.800 --> 01:01:13.559
I don't believe the MEP understands the oil industry.

1454
01:01:14.239 --> 01:01:15.880
You see the awkward situation the MEP is in?

1455
01:01:15.880 --> 01:01:17.360
I don't even open my mouth these days

1456
01:01:17.360 --> 01:01:18.639
for fear people will see I don't have any teeth left.

1457
01:01:18.639 --> 01:01:20.639
We have the obligation and the authority.

1458
01:01:20.639 --> 01:01:23.039
You may have the obligation,
but you don't have the authority.

1459

01:01:26.619 --> 01:01:28.480

So one evening,

1460

01:01:28.480 --> 01:01:32.400

a guy working in environmental protection sent me this photo.

1461

01:01:35.039 --> 01:01:38.119

This newspaper is from 1999.

1462

01:01:38.119 --> 01:01:43.039

That year he had graduated and was inspired to join the Environmental Protection Bureau (EPB).

1463

01:01:43.039 --> 01:01:44.920

He really wanted to make a difference.

1464

01:01:44.920 --> 01:01:48.599

He asked, "How come sometimes now I feel like nothing more than a stooge?"

1465

01:01:50.599 --> 01:01:53.400

I comforted him and said, "How can you think like that?"

1466

01:01:53.400 --> 01:01:56.440

He replied, "You're an investigative reporter.

1467

01:01:56.440 --> 01:01:58.860

You of all people should understand this better than me."

1468

01:02:02.679 --> 01:02:05.199

If you didn't get government approval for land use, would you still build?

1469

01:02:06.000 --> 01:02:07.519

No, we wouldn't dare.

1470

01:02:08.079 --> 01:02:10.920

If you didn't get permission from the Industry &

Commerce Administration or The Tax Bureau,

1471

01:02:10.920 --> 01:02:11.679
would you still build?

1472

01:02:11.679 --> 01:02:13.039
No, of course not.

1473

01:02:13.039 --> 01:02:14.639
So then why do you build without approval from the EPB?

1474

01:02:14.639 --> 01:02:16.559
We should have EPB approval.

1475

01:02:16.559 --> 01:02:16.960
We should.

1476

01:02:16.960 --> 01:02:17.119
We should.

1477

01:02:17.119 --> 01:02:18.079
We're working on it.

1478

01:02:18.880 --> 01:02:19.960
You're working on it?

1479

01:02:19.960 --> 01:02:20.679
Right.

1480

01:02:21.559 --> 01:02:23.960
Have you encountered this situation?

1481

01:02:23.960 --> 01:02:25.199
We've taken steps to prevent these situations.

1482

01:02:25.199 --> 01:02:27.480
We do onsite inspections, written inquiries,

1483

01:02:27.480 --> 01:02:29.039
and impose fines.

1484
01:02:29.039 --> 01:02:31.880
But in reality, they still build and start production.

1485
01:02:32.320 --> 01:02:34.440
We follow the proper procedures.

1486
01:02:34.440 --> 01:02:36.239
We issue the proper punishment notices.

1487
01:02:37.320 --> 01:02:39.960
We can't do anything if they don't stop.

1488
01:02:39.960 --> 01:02:41.039
It's a kind of helplessness.

1489
01:02:41.039 --> 01:02:43.320
Then isn't that considered illegal construction?

1490
01:02:43.840 --> 01:02:45.920
Well, it's rare to find factories
that don't violate regulations.

1491
01:02:47.079 --> 01:02:50.159
The government's attitude has always remained
coolheaded towards the coking industry.

1492
01:02:50.159 --> 01:02:51.920
After we adopted measures,

1493
01:02:51.920 --> 01:02:55.320
we were able to keep back-door bribing under control.

1494
01:02:55.320 --> 01:02:56.639
"Under control"?

1495
01:02:56.639 --> 01:02:59.679
Then why are there still more than
30 illegal projects if it's "under control"?

1496
01:02:59.679 --> 01:03:03.559
As the Xiaoyi Government, our attitude remains firm.

1497

01:03:03.559 --> 01:03:05.039

Well if your attitude is firm,

1498

01:03:05.039 --> 01:03:07.960

then you shouldn't have allowed a
single illegal project to start, right?

1499

01:03:11.420 --> 01:03:15.019

The Environmental Protection Bureau
is like a cat raised by the government.

1500

01:03:15.019 --> 01:03:17.699

Our ability to catch mice and the number we catch

1501

01:03:17.699 --> 01:03:19.780

is determined by the government.

1502

01:03:19.780 --> 01:03:20.940

It's out of the EPB's control.

1503

01:03:20.940 --> 01:03:22.860

We walked along several hundred meters of shoreline.

1504

01:03:22.860 --> 01:03:25.820

We saw the same kind of black
chemical sludge everywhere

1505

01:03:25.820 --> 01:03:28.139

and smelled 4 or 5 different types of chemicals.

1506

01:03:28.139 --> 01:03:32.420

What is that pungent odor
we're smelling as we sit here?

1507

01:03:32.420 --> 01:03:35.860

Perhaps my sense of smell isn't as sensitive as yours.

1508

01:03:36.380 --> 01:03:37.820

You're saying you don't smell it?

1509

01:03:40.519 --> 01:03:45.719
My sensitivity isn't as good as yours.

1510
01:03:48.719 --> 01:03:49.400
One ton of steel...

1511
01:03:49.400 --> 01:03:53.960
If you leave out all environmental protection costs,

1512
01:03:53.960 --> 01:03:56.280
you can save 100 RMB (\$16).

1513
01:03:56.280 --> 01:03:57.719
One ton of coal...

1514
01:03:57.719 --> 01:03:59.719
You can save 156 RMB (\$25)

1515
01:03:59.719 --> 01:04:04.760
One truck without environmental protection equipment
installed saves you almost 20,000 RMB (\$3,200).

1516
01:04:04.760 --> 01:04:06.760
And by refusing to upgrade fuel by a single grade,

1517
01:04:06.760 --> 01:04:09.800
you can save 50 billion RMB (\$8 billion).

1518
01:04:09.800 --> 01:04:10.960
Ten years ago,

1519
01:04:10.960 --> 01:04:13.079
when I asked what that smell was,

1520
01:04:13.079 --> 01:04:15.519
I didn't get an answer.

1521
01:04:15.519 --> 01:04:17.760
But now I know.

1522
01:04:17.760 --> 01:04:20.719

It's the rotten smell of money.

1523

01:04:20.719 --> 01:04:22.039

When I was conducting that interview,

1524

01:04:22.039 --> 01:04:24.519

the municipal party secretary said to me,

1525

01:04:24.519 --> 01:04:28.559

"You must shoot our achievements in pollution control!"

1526

01:04:28.559 --> 01:04:30.440

So he had me film this.

1527

01:04:35.000 --> 01:04:36.119

He was quite satisfied.

1528

01:04:36.119 --> 01:04:38.400

He said,

1529

01:04:38.400 --> 01:04:39.639

"Miss Chai...

1530

01:04:39.639 --> 01:04:42.800

I blew that up for you."

1531

01:04:42.800 --> 01:04:44.639

I went back three years later.

1532

01:04:44.639 --> 01:04:47.760

An even larger smokestack had taken its place.

1533

01:04:47.760 --> 01:04:49.199

However, it had been equipped with eco friendly features.

1534

01:04:49.199 --> 01:04:51.440

I asked, "Have you used them?"

1535

01:04:51.440 --> 01:04:53.519

The boss rubbed his hands

together and said, "We will soon."

1536

01:04:55.719 --> 01:04:57.280

That party secretary told me back then,

1537

01:04:57.280 --> 01:04:59.400

"You seem like you only want to talk about environmental protection."

1538

01:04:59.400 --> 01:04:59.639

Let me ask you:

1539

01:04:59.639 --> 01:05:00.440

Let me ask you:

1540

01:05:00.440 --> 01:05:03.159

Who would dare step in the way of China's economic rise?"

1541

01:05:03.159 --> 01:05:04.719

I also wanted to know this answer.

1542

01:05:04.719 --> 01:05:07.559

So ten years later, I went to a steel market in Hebei.

1543

01:05:09.039 --> 01:05:10.360

After I entered,

1544

01:05:10.360 --> 01:05:12.199

it was completely deserted.

1545

01:05:12.199 --> 01:05:14.360

This crude steel had even begun to rust.

1546

01:05:14.360 --> 01:05:15.960

It was buried in the weeds

1547

01:05:15.960 --> 01:05:18.440

and parts had been used for birds' nests.

1548

01:05:18.440 --> 01:05:21.039
I asked this young steel salesman,

1549
01:05:21.039 --> 01:05:22.559
"How is business?"

1550
01:05:22.559 --> 01:05:25.320
He said, "You see any trucks coming in to carry steel?"

1551
01:05:25.320 --> 01:05:26.559
All steel manufacturers

1552
01:05:26.559 --> 01:05:30.119
produce exactly the same low-end stuff.

1553
01:05:30.119 --> 01:05:33.599
They compete with each other
only based on quantity and price.

1554
01:05:33.599 --> 01:05:35.719
At this point, I'd be better off selling cabbage!"

1555
01:05:37.360 --> 01:05:39.559
When we produce one ton of steel,

1556
01:05:39.559 --> 01:05:41.360
how much energy is consumed?

1557
01:05:43.480 --> 01:05:44.920
600 kg of coal,

1558
01:05:44.920 --> 01:05:46.280
and 3 to 6 tons of water.

1559
01:05:46.280 --> 01:05:47.599
How much do we emit?

1560
01:05:47.599 --> 01:05:49.079
This much sulfur dioxide,

1561
01:05:49.079 --> 01:05:50.679

and this much smoke and dust.

1562

01:05:50.679 --> 01:05:54.639

So then what's the profit from producing one ton of steel?

1563

01:05:54.639 --> 01:05:55.639

Try to guess.

1564

01:05:58.119 --> 01:05:58.960

How much?

1565

01:06:00.159 --> 01:06:01.199

1,000 RMB? (\$160)

1566

01:06:02.480 --> 01:06:05.079

Nope, not even enough to buy an egg.

1567

01:06:05.079 --> 01:06:08.559

Profits from one ton of steel in 2014

1568

01:06:08.559 --> 01:06:10.119

were less than 2 RMB (32¢).

1569

01:06:10.119 --> 01:06:12.000

How about burning 1 ton of coal?

1570

01:06:12.000 --> 01:06:14.239

How much do we pollute?

1571

01:06:14.239 --> 01:06:15.480

1.53 kg

This much sulfur dioxide.

1572

01:06:15.480 --> 01:06:16.920

3 kg - 9 kg

This much nitrogen dioxide.

1573

01:06:16.920 --> 01:06:18.280

~2 kg

This much carbon monoxide.

1574

01:06:18.280 --> 01:06:19.440

9 kg - 11 kg

And this much dust.

1575

01:06:19.440 --> 01:06:19.960

Can you guess the profit from burning one ton of coal?

1576

01:06:19.960 --> 01:06:23.599

Can you guess the profit from burning one ton of coal?

1577

01:06:23.599 --> 01:06:25.880

Two eggs?

1578

01:06:25.880 --> 01:06:27.880

You're still overestimating.

1579

01:06:27.880 --> 01:06:31.199

The profit is less than what it costs to buy a soda.

1580

01:06:31.199 --> 01:06:33.679

Among China's 39 heavy industries,

1581

01:06:33.679 --> 01:06:36.360

22 currently face severe overcapacity.

1582

01:06:36.360 --> 01:06:39.480

So Mr. Cao Xianghong's comment about Sinopec is rather accurate.

1583

01:06:39.480 --> 01:06:40.519

"We're like a fat person."

1584

01:06:40.519 --> 01:06:41.519

All meat,

1585

01:06:41.519 --> 01:06:44.039

but no muscle."

1586

01:06:44.039 --> 01:06:49.840

However, these firms are still receiving huge amounts of subsidies.

1587

01:06:49.840 --> 01:06:51.599

Take a look.

1588

01:06:51.599 --> 01:06:58.000

This is a list of publicly traded steel companies given government assistance from 2011 to 2013.

1589

01:06:58.000 --> 01:06:59.480

On that list is one company

1590

01:06:59.480 --> 01:07:02.679

that received subsidies every other year so it could remain on the stock market.

1591

01:07:02.679 --> 01:07:03.880

How much did it receive?

1592

01:07:03.880 --> 01:07:06.000

Ones, tens, hundred, thousands, ten-thousands,

1593

01:07:06.000 --> 01:07:09.239

hundred-thousands, millions, ten-millions, hundred-millions, billions,

1594

01:07:09.239 --> 01:07:12.119

2 billion RMB (\$319 million)

1595

01:07:12.119 --> 01:07:15.079

2 billion every other year.

1596

01:07:15.079 --> 01:07:18.039

Also on the list is a company that was already running a serious deficit.

1597

01:07:18.039 --> 01:07:20.159

After they took the subsidy,

1598

01:07:20.159 --> 01:07:22.639

this is the banner they hung inside their office:

1599

01:07:22.639 --> 01:07:28.920
"Through Intense Struggle and Indomitable Work Spirit,
We Pledge That Our Steel Will Be 100 RMB (\$16) Cheaper
The Competition's!"

1600
01:07:28.920 --> 01:07:33.239
From this, Vice-Governor of the People's Bank of China
Liu Shiyu, decided to call these firms "zombies".

1601
01:07:33.239 --> 01:07:35.440
Through consuming huge amounts of financial resources,

1602
01:07:35.440 --> 01:07:38.679
they can cause incalculable danger to the real economy.

1603
01:07:38.679 --> 01:07:41.119
And even now, these firms are still expanding.

1604
01:07:41.119 --> 01:07:43.800
A few days ago, I received a letter from a young girl.

1605
01:07:43.800 --> 01:07:46.460
Wang Huiqin said that the coking
plant next to her family's home was building

1606
01:07:46.460 --> 01:07:49.440
an extension and wanted to demolish their house.

1607
01:07:49.440 --> 01:07:51.920
Her father opposed, so he was beaten up.

1608
01:07:51.920 --> 01:07:53.400
Wang Huiqin hoped I could help her.

1609
01:07:55.039 --> 01:08:00.119
The name of that little girl who had never seen the
stars or white clouds ten years ago was Wang Huiqin.

1610
01:08:00.119 --> 01:08:01.639
I asked her, "How's your health these days?"

1611
01:08:01.639 --> 01:08:03.159

She said, "Miss Chai, I can't worry about that now.

1612

01:08:03.159 --> 01:08:05.480

I just need to find a place for my family to live."

1613

01:08:07.039 --> 01:08:09.639

Fortunately, when I gave her a call a few days ago she said

1614

01:08:09.639 --> 01:08:12.039

the owner of the coking plant had just been taken away by the authorities.

1615

01:08:13.880 --> 01:08:17.119

But these industries that are already facing serious overcapacity

1616

01:08:17.119 --> 01:08:18.520

in nearly half of China's provinces

1617

01:08:18.520 --> 01:08:22.279

are still classified as "pillar industries" by the Twelfth Five-Year Plan.

1618

01:08:22.279 --> 01:08:24.279

The reason is quite simple.

1619

01:08:24.279 --> 01:08:27.539

If you want urban population to rise 1% every year,

1620

01:08:27.539 --> 01:08:29.479

then these excess supplies will all be consumed.

1621

01:08:29.479 --> 01:08:31.239

As long as you build houses, you should need steel.

1622

01:08:31.239 --> 01:08:33.260

As long as you repair roads, you should need trucks.

1623

01:08:33.260 --> 01:08:33.779

Right?

1624

01:08:34.720 --> 01:08:36.680

Professor Jiang Yi of Tsinghua University told me

1625

01:08:36.680 --> 01:08:40.239

China's urban development has
also reached a tipping point,

1626

01:08:40.239 --> 01:08:42.720

even more so than industry.

1627

01:08:42.720 --> 01:08:44.039

I couldn't really believe that

1628

01:08:44.039 --> 01:08:47.840

because I thought transformations
of average families such as mine

1629

01:08:47.840 --> 01:08:49.119

and improvements in living standards

1630

01:08:49.119 --> 01:08:50.920

were dependent on the process of urbanization.

1631

01:08:51.840 --> 01:08:53.399

When we were young,

1632

01:08:53.399 --> 01:08:55.960

my little sister and I grew up in a large shared house.

1633

01:08:55.960 --> 01:08:57.479

It had over 300 years of history

1634

01:08:57.479 --> 01:08:59.000

and housed a dozen families.

1635

01:08:59.000 --> 01:09:01.119

Our situation improved later when

1636

01:09:01.119 --> 01:09:03.960

we moved into our own house
provided by mother's work unit.

1637

01:09:03.960 --> 01:09:06.760

It was 12 square meters and fit all 5 of us.

1638

01:09:06.760 --> 01:09:07.960

When we slept at night,

1639

01:09:07.960 --> 01:09:11.399

we added a wooden plank propped up with chairs,

1640

01:09:11.399 --> 01:09:13.760

turning our single bed into a double one.

1641

01:09:15.039 --> 01:09:16.840

This was my bedroom window.

1642

01:09:16.840 --> 01:09:19.000

Very western, huh?

1643

01:09:19.000 --> 01:09:20.399

In reality, the bedroom was tiny.

1644

01:09:20.399 --> 01:09:21.279

There was no window

1645

01:09:21.279 --> 01:09:23.359

so I had to hang up a picture on the wall.

1646

01:09:23.359 --> 01:09:26.399

It represented the imagination
of a young, creative girl.

1647

01:09:28.359 --> 01:09:30.920

This picture was taken when I was going off to college.

1648

01:09:30.920 --> 01:09:32.399

It shows what our county seat looked like.

1649

01:09:32.399 --> 01:09:34.960

Everyday, I would walk along
this road to primary school.

1650
01:09:34.960 --> 01:09:37.239
Back then, it had the same appearance.

1651
01:09:37.239 --> 01:09:39.039
The changes in living standards
my family saw over the years

1652
01:09:39.039 --> 01:09:41.880
prove that there are millions of
average households in need of new construction.

1653
01:09:41.880 --> 01:09:42.760
Jiang Yi asked me,

1654
01:09:42.760 --> 01:09:44.720
"Hasn't it been several years
since you last went to Shanxi?"

1655
01:09:44.720 --> 01:09:45.560
I said he was right.

1656
01:09:45.560 --> 01:09:47.359
He said, "Why don't you go back and take a look?"

1657
01:09:47.359 --> 01:09:49.760
So this year I brought my daughter to visit Shanxi

1658
01:09:49.760 --> 01:09:52.439
and took this video with my phone along the way.

1659
01:10:04.800 --> 01:10:11.039
Various billboards advertising
new housing developments...

1660
01:10:46.060 --> 01:10:48.899
I feel very happy that my
hometown is going through these changes

1661
01:10:48.899 --> 01:10:50.340
because the people there need wealth.

1662

01:10:50.340 --> 01:10:51.539
They need development.

1663

01:10:51.539 --> 01:10:52.979
But to my surprise,

1664

01:10:52.979 --> 01:10:57.140
even though I saw that many real estate advertisements
and that many buildings under construction,

1665

01:10:57.140 --> 01:10:58.619
they were mostly empty.

1666

01:10:58.619 --> 01:11:01.020
I asked a relative of mine who
had invested in local real estate,

1667

01:11:01.020 --> 01:11:03.300
"How much of this building has been sold?"

1668

01:11:03.300 --> 01:11:04.859
He said 20% to 30%.

1669

01:11:04.859 --> 01:11:06.340
I asked, "Why that little?"

1670

01:11:06.340 --> 01:11:07.859
He hesitated and said,

1671

01:11:07.859 --> 01:11:10.439
"Ever since government officials needed to
use their real names to buy real estate,

1672

01:11:10.439 --> 01:11:11.699
it hasn't been selling well."

1673

01:11:11.699 --> 01:11:15.659
He was kind enough to book a
local hotel for my entire family.

1674

01:11:15.659 --> 01:11:17.380

Upon seeing the entrance, I almost had a heart attack.

1675

01:11:17.380 --> 01:11:21.340
because it claimed to be a 5 star hotel.

1676

01:11:21.340 --> 01:11:23.579
He had also booked us the presidential suite.

1677

01:11:23.579 --> 01:11:24.659
I said, "We can't take this!"

1678

01:11:24.659 --> 01:11:29.500
He replied, "Don't worry, it was only 200 RMB (\$32)."

1679

01:11:29.500 --> 01:11:32.859
We drove our car into the parking lot.

1680

01:11:32.859 --> 01:11:34.739
The entire lot didn't have a single light.

1681

01:11:34.739 --> 01:11:36.140
It was completely dark.

1682

01:11:36.140 --> 01:11:39.180
So this trembling old man came over with a flashlight

1683

01:11:39.180 --> 01:11:40.300
and led us out.

1684

01:11:40.300 --> 01:11:42.619
He took us into the hotel lobby,

1685

01:11:42.619 --> 01:11:45.899
and then continued to light the way
up to our hallway and into our room.

1686

01:11:45.899 --> 01:11:48.260
They didn't turn on a single light in the entire hotel

1687

01:11:48.260 --> 01:11:49.779
because no one was staying there.

1688

01:11:51.619 --> 01:11:52.460

Back in Beijing,

1689

01:11:52.460 --> 01:11:54.140

I brought this up to Professor Jiang.

1690

01:11:54.140 --> 01:11:55.060

He told me,

1691

01:11:55.060 --> 01:11:58.100

"What you saw in Shanxi is just a
microcosm of the rest of China."

1692

01:11:58.100 --> 01:11:58.779

In China,

1693

01:11:58.819 --> 01:12:01.260

80 natural villages disappear every day.

1694

01:12:01.260 --> 01:12:04.100

The average lifespan of a house is only 30 years.

1695

01:12:04.100 --> 01:12:05.979

Out of 200 prefecture level cities in China,

1696

01:12:05.979 --> 01:12:10.380

184 have plans to become "international cities".

1697

01:12:10.380 --> 01:12:11.739

There are 1.3 billion people in China,

1698

01:12:11.739 --> 01:12:14.699

but if we add up these cities'
long-term population plans,

1699

01:12:14.699 --> 01:12:16.619

we are planning for 3.4 billion people.

1700

01:12:18.300 --> 01:12:21.460

In 1998, I arrived in Beijing

with a small suitcase in my hand.

1701

01:12:21.460 --> 01:12:24.340

I studied here and found a job.

1702

01:12:24.340 --> 01:12:27.460

I also found a sense of self-worth
and belonging in this city.

1703

01:12:27.460 --> 01:12:28.819

If there was no urbanization in China,

1704

01:12:28.819 --> 01:12:30.420

I'd still be back in Shanxi

1705

01:12:30.420 --> 01:12:32.619

working a menial job my parents found for me,

1706

01:12:32.619 --> 01:12:35.260

wearing blue overalls and calculating
my remaining years on an abacus.

1707

01:12:35.260 --> 01:12:37.859

Cities have given us personal freedom,

1708

01:12:37.859 --> 01:12:40.020

and they've given this country

1709

01:12:40.020 --> 01:12:42.180

thirty years of prosperity.

1710

01:12:42.180 --> 01:12:44.539

Plans call for 300-400 million more
people entering our cities in the future.

1711

01:12:44.539 --> 01:12:46.939

This inevitable arrival is unavoidable.

1712

01:12:46.939 --> 01:12:50.340

And those who come will bring this
country unimaginable culture and wealth.

1713
01:12:50.340 --> 01:12:52.260
However, if we don't change our current model

1714
01:12:52.260 --> 01:12:55.260
of using investment to pull
along industry and urban development,

1715
01:12:55.260 --> 01:12:56.859
what will be the consequence?

1716
01:12:56.859 --> 01:12:59.619
The State Council Development Research Center
did a calculation that in 15 years,

1717
01:12:59.659 --> 01:13:01.819
our coal consumption will reach 6 billion tons.

1718
01:13:01.819 --> 01:13:04.260
The number of vehicles in use will reach 400 million.

1719
01:13:04.260 --> 01:13:05.260
What does this mean for us?

1720
01:13:05.300 --> 01:13:06.899
Professor Ni Weidou of Tsinghua University told me,

1721
01:13:06.899 --> 01:13:09.779
"This means that even before
we exhaust our natural resources,

1722
01:13:09.779 --> 01:13:11.779
we will have exhausted the
capacity of our environment."

1723
01:13:11.779 --> 01:13:12.899
This means that for China,

1724
01:13:12.939 --> 01:13:14.979
the pollution has only just started.

1725
01:13:14.979 --> 01:13:17.659

The traffic has only just started.

1726

01:13:20.960 --> 01:13:21.840

"The Demands of a Nation"

1727

01:13:23.060 --> 01:13:23.779

Beijing,

1728

01:13:26.159 --> 01:13:28.560

Nanjing, Xian, Chengdu

1729

01:13:29.500 --> 01:13:35.380

and 10 other major cities must delimit
their urban growth boundaries.

1730

01:13:36.939 --> 01:13:40.340

The State Council must demand an end to construction of
projects violating environmental protection
regulations.

1731

01:13:41.220 --> 01:13:46.659

Businesses shouldn't meddle with government affairs.

1732

01:13:48.460 --> 01:13:57.500

Demand that localities abolish preferential
policies which undermine fairness.

1733

01:14:00.140 --> 01:14:09.819

Demand that we use the carrying capacity
of our natural resources as an upper limit.

1734

01:14:11.260 --> 01:14:23.380

Force companies that exceed emission standards
or production capacity to shut down.

1735

01:14:28.239 --> 01:14:30.359

This was Beijing during the APEC
Summit in November 2014.

1736

01:14:30.359 --> 01:14:35.239

One morning, my husband brought
me to a place he frequented as a child.

1737

01:14:35.239 --> 01:14:38.399

It was there his father taught him how to ice skate,

1738

01:14:38.399 --> 01:14:39.279

how to swim,

1739

01:14:39.279 --> 01:14:40.079

how to fish.

1740

01:14:41.520 --> 01:14:45.359

During the winter, he loved to watch the cracks
in the ice disappear into the distance

1741

01:14:45.359 --> 01:14:48.479

until they reached the corner tower
of the Forbidden City.

1742

01:14:48.479 --> 01:14:53.560

That was his memory of this ancient and beautiful city.

1743

01:14:53.560 --> 01:14:54.760

We looked at this pristine scene

1744

01:14:54.760 --> 01:14:57.960

and felt like two kids staring
at the last piece of candy.

1745

01:14:57.960 --> 01:15:00.159

You know if you don't eat it, it will melt away.

1746

01:15:00.159 --> 01:15:02.119

But you also know once you eat it,
it will disappear just the same.

1747

01:15:02.119 --> 01:15:05.399

We felt that same sense of excitement,
anxiety, and frustration.

1748

01:15:06.359 --> 01:15:08.399

I'm a Beijinger, born and bred.

1749

01:15:08.399 --> 01:15:10.239
When I was young, the skies were crystal clear.

1750
01:15:10.239 --> 01:15:12.760
The canals were so clean you could
see the bottom and catch fish.

1751
01:15:12.760 --> 01:15:14.680
I also grew up here.

1752
01:15:14.680 --> 01:15:16.720
I also remember what it was like back then.

1753
01:15:16.720 --> 01:15:19.119
Standing on Chang'an Avenue, we could
see all the way to the Western Hills.

1754
01:15:19.119 --> 01:15:21.720
Cleaning up our air isn't an impossible task.

1755
01:15:21.720 --> 01:15:23.359
It's entirely achievable.

1756
01:15:23.359 --> 01:15:25.399
It just depends on determination.

1757
01:15:25.399 --> 01:15:31.079
I hope and believe that with persistent efforts,
the "APEC Blue" will be here to stay.

1758
01:15:33.100 --> 01:15:35.859
After returning home, I asked an expert from
the Chinese Academy of Sciences,

1759
01:15:35.859 --> 01:15:39.300
"Can you tell me what it would take
to keep this 'APEC Blue'?"

1760
01:15:40.199 --> 01:15:42.720
He said, "We must reduce emissions
compared to 2013 levels by

1761

01:15:42.840 --> 01:15:44.359
this much for sulfur dioxide,

1762

01:15:44.359 --> 01:15:45.760
this much for nitrogen oxide,

1763

01:15:45.760 --> 01:15:47.239
and this much for PM2.5."

1764

01:15:47.239 --> 01:15:48.600
To put it simply,

1765

01:15:48.600 --> 01:15:52.000
we have to cut more than half of the pollutants
in our air to get that blue sky.

1766

01:15:53.460 --> 01:15:55.560
The US and China released a joint
statement during the APEC Summit

1767

01:15:55.579 --> 01:15:58.500
China pledged to peak its carbon emissions and
to increase its share of non-fossil fuels

1768

01:15:58.500 --> 01:16:00.340
to 20% of all energy by 2030.

1769

01:16:01.500 --> 01:16:03.640
Coal dominates China's energy structure and
is a source of carbon emissions and smog.

1770

01:16:03.640 --> 01:16:06.460
Reducing carbon emissions and using
cleaner energy are interdependent.

1771

01:16:06.460 --> 01:16:08.500
I set the goal for 2030 as the peak.

1772

01:16:08.500 --> 01:16:10.140
I set the goal for 2030 as the peak.

1773

01:16:10.140 --> 01:16:14.739

In fact, it was a forced mechanism to push us onto a green, low-carbon path.

1774

01:16:14.739 --> 01:16:18.739

Many will ask, "Do we really need to sacrifice economic development in order to protect the environment?"

1775

01:16:18.739 --> 01:16:20.020

This is a debt you must repay.

1776

01:16:20.020 --> 01:16:22.779

You must pay for the mistakes you've made in the past.

1777

01:16:22.779 --> 01:16:26.300

The real issues then become how to employ people and raise their income.

1778

01:16:26.300 --> 01:16:27.220

Through a major shift.

1779

01:16:27.220 --> 01:16:31.340

What if some workers from industries affected by this major shift lose their jobs?

1780

01:16:31.420 --> 01:16:36.779

China's green industry currently generates over 3.7 trillion RMB (\$590 billion) per year.

1781

01:16:36.779 --> 01:16:40.340

It employs more than 39 million people.

1782

01:16:40.340 --> 01:16:41.739

Green industry is industry too.

1783

01:16:41.739 --> 01:16:43.100

But many people wonder,

1784

01:16:43.100 --> 01:16:47.300

"Will the Chinese government continue to invest money to fuel economic growth?"

1785

01:16:47.300 --> 01:16:49.180

If we want to raise economic growth,

1786

01:16:49.180 --> 01:16:53.460

the way to do that is through a green,
low-carbon, circular economy.

1787

01:16:53.460 --> 01:16:56.100

Think about The Great Smog
of London or LA's smog crisis.

1788

01:16:56.100 --> 01:16:58.260

It took them 60 to 70 years to solve those problems.

1789

01:16:58.260 --> 01:16:59.539

We can learn from them

1790

01:16:59.539 --> 01:17:02.939

and solve our current crisis
in a much shorter time frame.

1791

01:17:03.060 --> 01:17:04.100

I was very worried before.

1792

01:17:04.100 --> 01:17:05.460

Beijing is still expanding.

1793

01:17:05.460 --> 01:17:07.659

Its number of vehicles is still increasing.

1794

01:17:07.659 --> 01:17:09.220

Can Beijing really lower its pollution?

1795

01:17:09.220 --> 01:17:11.460

But this is Los Angeles,

1796

01:17:11.460 --> 01:17:13.180

a place very similar to Beijing.

1797

01:17:13.180 --> 01:17:14.100

It's also surrounded by mountains,

1798

01:17:14.100 --> 01:17:15.859
making it difficult for air to disperse.

1799
01:17:15.859 --> 01:17:20.300
Because of this, it once experienced a
large scale photochemical smog incident.

1800
01:17:20.300 --> 01:17:21.979
Take a look back to 1950.

1801
01:17:21.979 --> 01:17:25.500
These cans were sold in shops in Hollywood.

1802
01:17:25.500 --> 01:17:27.500
They were filled with air from Los Angeles.

1803
01:17:27.500 --> 01:17:28.579
There's a slogan on the side.

1804
01:17:28.579 --> 01:17:31.180
"Buy a Can for Someone You Hate!"

1805
01:17:31.180 --> 01:17:34.659
You can imagine the frustration and annoyance
of those living in LA back then.

1806
01:17:34.659 --> 01:17:36.739
But since 1970,

1807
01:17:36.739 --> 01:17:38.739
the number of vehicles in LA has actually increased.

1808
01:17:38.739 --> 01:17:40.899
In fact, it's tripled.

1809
01:17:40.899 --> 01:17:43.460
But what about emissions?

1810
01:17:43.460 --> 01:17:45.619
They've been reduced by 75%.

1811

01:17:45.619 --> 01:17:47.220
How did they accomplish this?

1812
01:17:47.220 --> 01:17:49.380
I took a trip to Los Angeles to find out.

1813
01:17:55.399 --> 01:17:58.039
We are now in the skies over Santa Monica.

1814
01:17:58.439 --> 01:18:00.800
You can see a layer of haze up ahead.

1815
01:18:00.800 --> 01:18:02.000
That's smog.

1816
01:18:02.319 --> 01:18:05.640
We often see those tall buildings in Hollywood films,

1817
01:18:05.640 --> 01:18:08.800
but Los Angeles isn't really a city of skyscrapers.

1818
01:18:08.800 --> 01:18:11.119
In fact, the surrounding area is
a wide expanse of flat land,

1819
01:18:11.119 --> 01:18:12.600
covered with one- and two-story buildings like these.

1820
01:18:12.600 --> 01:18:20.600
This low-density urban development
means you need a car to get around the city.

1821
01:18:22.199 --> 01:18:26.039
LA's urban sprawl is a classic example
of failed urban planning.

1822
01:18:26.039 --> 01:18:29.119
Its public transportation system is far from efficient

1823
01:18:29.119 --> 01:18:31.159
which has caused unrestrained
growth in motorized vehicles.

1824

01:18:31.840 --> 01:18:34.960

In a city of more than 17 million people,
there are about 13 million vehicles.

1825

01:18:34.960 --> 01:18:36.520

That's nearly one per person.

1826

01:18:36.520 --> 01:18:41.039

People drive an estimated 500 million
miles on California highways in one day.

1827

01:18:41.039 --> 01:18:44.600

Add up the fuel and that's enough to
go to the moon and back 1,600 times.

1828

01:18:52.680 --> 01:18:54.239

There's a brewery over there and
a large warehouse over there.

1829

01:18:54.239 --> 01:18:58.039

It seems like this truck just came
from the Port of Long Beach.

1830

01:18:58.039 --> 01:19:00.279

Take a look at this huge "Optimus Prime" looking guy.

1831

01:19:00.279 --> 01:19:03.239

18 wheels, more than 20 meters long...

1832

01:19:03.239 --> 01:19:06.960

Its mass is about the same as
a tank or an armored vehicle.

1833

01:19:08.119 --> 01:19:10.600

Diesel Vehicles in California: 1,061,745

1834

01:19:10.600 --> 01:19:12.720

Average Daily Fuel Consumption Per Vehicle: 35.2L

1835

01:19:20.920 --> 01:19:22.760

According to estimates from CARB,

1836

01:19:22.760 --> 01:19:27.359

71% of the carcinogens in Southern California's atmosphere come from diesel vehicles.

1837

01:19:27.359 --> 01:19:30.199

Therefore all diesel vehicles are required to install a diesel particulate filter (DPF).

1838

01:19:30.199 --> 01:19:33.279

This small round filter is like putting a protective mask on your truck.

1839

01:19:33.279 --> 01:19:35.720

It can filter out 99% of particulate matter.

1840

01:19:37.600 --> 01:19:39.279

This driver is from Mexico.

1841

01:19:39.279 --> 01:19:40.840

He is driving an older truck from 2005.

1842

01:19:40.840 --> 01:19:42.760

According to the law, he must install a DPF.

1843

01:19:42.760 --> 01:19:43.920

But he still hasn't done so.

1844

01:19:43.920 --> 01:19:45.960

Even though his exhaust emissions are within standards,

1845

01:19:45.960 --> 01:19:48.260

he will still be fined \$1,000.

1846

01:19:55.279 --> 01:19:58.399

His monthly salary is around \$4,000.

1847

01:19:58.399 --> 01:20:00.720

So this \$1,000 ticket is pretty hefty.

1848

01:20:09.239 --> 01:20:11.699

What happens if you're caught without a DPF again?

1849

01:20:11.699 --> 01:20:12.539

More tickets.

1850

01:20:12.539 --> 01:20:15.939

If you still don't comply, we'll report you
to the Department of Motor Vehicles.

1851

01:20:15.939 --> 01:20:17.739

You won't be able to renew your license plates.

1852

01:20:17.739 --> 01:20:20.420

If you can't do that, you can't
drive and you can't make money.

1853

01:20:22.199 --> 01:20:26.359

To control its air pollution, California had to set
very strict emission standards for new motor vehicles.

1854

01:20:26.359 --> 01:20:28.800

The EPA has the authority to inspect any new vehicle.

1855

01:20:28.800 --> 01:20:32.319

It also has the right to inspect any in-use
vehicle with less than 120,000 miles.

1856

01:20:32.319 --> 01:20:33.680

If it finds a manufacturer violating regulations,

1857

01:20:33.680 --> 01:20:38.239

it will find them \$25,000 for each day
since the vehicle left the factory.

1858

01:20:38.239 --> 01:20:41.439

The EPA also has the authority to order auto
manufacturers to recall any noncompliant vehicles.

1859

01:21:00.399 --> 01:21:02.479

Annual Number of Subpoenas Issued by
Heavy Duty-Vehicle Inspection Program: 29,913

1860

01:21:02.479 --> 01:21:03.720
Number of Cases Settled: 3,281

1861
01:21:03.720 --> 01:21:06.399
Total Fines: \$1,336,880

1862
01:21:12.460 --> 01:21:15.060
This court settlement especially interested me.

1863
01:21:15.060 --> 01:21:17.500
I only realized upon closer inspection

1864
01:21:17.500 --> 01:21:20.739
that the company being fined
was importing vehicles from China.

1865
01:21:20.739 --> 01:21:22.220
They were giving out false emissions certificates.

1866
01:21:22.220 --> 01:21:27.899
However, this time they were caught and fined
almost 400 million RMB (\$64 million).

1867
01:21:27.899 --> 01:21:30.180
The company's president and
vice president were also thrown in jail.

1868
01:21:30.180 --> 01:21:31.859
Human nature is the same across the world.

1869
01:21:31.859 --> 01:21:36.859
In America, you can also find people who want
to escape punishment or break the law.

1870
01:21:36.859 --> 01:21:38.500
But if law enforcement is strict,

1871
01:21:38.500 --> 01:21:40.340
you can keep 90% of them in line.

1872
01:21:40.340 --> 01:21:41.899
However, if law enforcement is weak,

1873

01:21:41.899 --> 01:21:43.539
it will be like Beijing's EPB said:

1874

01:21:43.539 --> 01:21:45.699
90% of vehicles will continue to flaunt
environmental protection regulations.

1875

01:21:47.380 --> 01:21:50.020
This year, the "Law on the Prevention and Control of
Atmospheric Pollution" will finally be amended.

1876

01:21:50.020 --> 01:21:53.640
In its current draft, it gives environmental
protection departments the authority to fine

1877

01:21:53.640 --> 01:21:55.500
or recall vehicles with fake emissions certificates.

1878

01:21:55.500 --> 01:21:58.939
However, it won't be put into effect
until September 2015 at the earliest.

1879

01:21:58.939 --> 01:21:59.939
In that case, before that time,

1880

01:21:59.939 --> 01:22:02.699
every single night, even at this very moment,

1881

01:22:02.699 --> 01:22:06.579
millions of trucks are still speeding
across China's vast landscape.

1882

01:22:06.579 --> 01:22:08.779
How many of them have fake emissions certificates?

1883

01:22:08.779 --> 01:22:11.500
How many of them are emitting air pollutants?

1884

01:22:11.500 --> 01:22:13.260
This is what each one of us has to endure.

1885

01:22:14.699 --> 01:22:21.060

So before the original law is laid to rest,

1886

01:22:21.060 --> 01:22:24.100

can we use it at least once?

1887

01:22:24.100 --> 01:22:28.060

Can we prevent it from looking like
this in the history books?

1888

01:22:30.560 --> 01:22:33.920

Back when America wanted to
implement strict emissions standards,

1889

01:22:33.920 --> 01:22:36.439

automakers across the board were up in arms.

1890

01:22:36.439 --> 01:22:37.399

They wouldn't agree.

1891

01:22:37.399 --> 01:22:40.199

They sued the EPA every other day
because they didn't want to change.

1892

01:22:40.199 --> 01:22:42.600

But then, some foreign manufacturers stood up and said,

1893

01:22:42.600 --> 01:22:44.039

"We can meet the standards!"

1894

01:22:44.039 --> 01:22:47.560

After they heard this, American automakers
suddenly sprang to their feet to catch up.

1895

01:22:47.560 --> 01:22:50.000

Unfortunately by then, they'd lost
half the market share.

1896

01:22:52.539 --> 01:22:54.699

I asked an official from the EPA in America,

1897

01:22:54.699 --> 01:22:59.979
"Weren't you afraid you were
hurting the domestic auto industry?"

1898
01:22:59.979 --> 01:23:01.460
He answered,

1899
01:23:01.460 --> 01:23:03.060
"Environmental protection isn't a burden,

1900
01:23:03.060 --> 01:23:04.579
it's innovation.

1901
01:23:04.579 --> 01:23:06.939
Preserving an outdated industry
doesn't allow innovation.

1902
01:23:06.939 --> 01:23:09.060
The government's role is to set the standards

1903
01:23:09.060 --> 01:23:11.619
and then guarantee fair market competition.

1904
01:23:11.619 --> 01:23:14.939
You win the market through fair competition."

1905
01:23:14.939 --> 01:23:19.380
But China is a country where coal accounts for
70% of total energy consumption.

1906
01:23:19.380 --> 01:23:23.180
Within our current energy structure,
how can we reduce our dependency on coal?

1907
01:23:23.180 --> 01:23:25.180
Here's a graph of London's air pollutant concentration.

1908
01:23:25.180 --> 01:23:25.979
Many people have said to me,

1909
01:23:25.979 --> 01:23:28.859
"London needed 40 to 50 years to

fix their pollution problem

1910

01:23:28.859 --> 01:23:30.380

so we also have to wait that long."

1911

01:23:30.380 --> 01:23:32.779

But is that true?

1912

01:23:32.779 --> 01:23:34.739

Look here.

1913

01:23:34.739 --> 01:23:37.300

Within the first ten years that London started to tackle their pollution,

1914

01:23:37.300 --> 01:23:39.779

they reduced pollutants by 80%.

1915

01:23:39.779 --> 01:23:41.380

That's a huge improvement.

1916

01:23:41.380 --> 01:23:43.060

Let's look at how London achieved this.

1917

01:23:45.159 --> 01:23:46.840

When The Great Smog of London occurred,

1918

01:23:46.840 --> 01:23:49.720

90% of England's energy consumption came from coal.

1919

01:23:49.720 --> 01:23:50.720

In 1953,

1920

01:23:50.720 --> 01:23:54.039

the average concentration of particulate matter exceeded current EU standards tenfold.

1921

01:23:54.039 --> 01:23:57.119

The pressure to control their pollution was even greater than ours now.

1922

01:23:57.119 --> 01:23:59.840
in 1956, the British passed the Clean Air Act.

1923
01:23:59.840 --> 01:24:02.640
Every colliery used to have washeries on the surface.

1924
01:24:02.640 --> 01:24:06.199
So the coal would've been washed before it
would've been sold on then to customers.

1925
01:24:06.199 --> 01:24:11.119
To use ordinary coal or to use it in
an open grate would be illegal.

1926
01:24:11.119 --> 01:24:12.800
And that by the way is the grate.

1927
01:24:12.800 --> 01:24:14.279
You still use it?

1928
01:24:14.279 --> 01:24:15.680
We do sometimes.

1929
01:24:15.680 --> 01:24:17.920
It's a smokeless coal. This is called "homefire".

1930
01:24:17.920 --> 01:24:21.239
The government funded 70%
of the cost to renovate home furnaces.

1931
01:24:21.680 --> 01:24:23.079
But penalties for noncompliance were harsh.

1932
01:24:23.439 --> 01:24:26.399
Violators could be fined 100
British Pounds or even face jail time.

1933
01:24:26.399 --> 01:24:30.319
The installation of any apparatus
emitting smoke is strictly prohibited.

1934
01:24:30.319 --> 01:24:35.000

Smoke wardens could inspect a shop
and decide you were selling illegal materials.

1935

01:24:35.000 --> 01:24:38.079

This is the last tram of coal from a
former coal mine in South Wales.

1936

01:24:38.600 --> 01:24:40.960

It came to a stop on these tracks in 1983.

1937

01:24:41.840 --> 01:24:43.960

In the 20 years after The Great Smog,

1938

01:24:43.960 --> 01:24:46.479

oil replaced more than 20% of coal.

1939

01:24:46.479 --> 01:24:48.840

Natural gas replaced more than 30% of coal.

1940

01:24:48.840 --> 01:24:53.920

Across England, coal consumption dropped from
90% to 30% of total energy consumption.

1941

01:24:53.920 --> 01:24:57.399

And heavy industry dropped to account
for only 10% of England's GDP.

1942

01:24:57.399 --> 01:24:59.359

Many coal mines and factories shut down.

1943

01:24:59.359 --> 01:25:01.279

And that's another London landmark gone.

1944

01:25:01.800 --> 01:25:03.960

More than 1 million people were left unemployed.

1945

01:25:03.960 --> 01:25:06.279

How can you earn money today?

1946

01:25:08.000 --> 01:25:10.000

Well, you have to find alternative employment.

1947

01:25:10.000 --> 01:25:13.960

I'm not a rich man, but at least I don't
have to worry about paying bills.

1948

01:25:13.960 --> 01:25:15.239

Mining to me, it was just a job.

1949

01:25:15.239 --> 01:25:18.520

A hundred years ago we had a
million miners in the United Kingdom.

1950

01:25:18.520 --> 01:25:20.600

We've just got ten of thousands now,

1951

01:25:20.600 --> 01:25:24.119

but we've got more people in job
than ever before in our history!

1952

01:25:24.119 --> 01:25:26.399

If an industry is on its way out,

1953

01:25:26.399 --> 01:25:28.239

there's another industry coming up.

1954

01:25:28.560 --> 01:25:31.640

From 1960 to 1970, in the first ten years after
England began to control its air pollution,

1955

01:25:31.640 --> 01:25:33.239

not only did the economy not decline,

1956

01:25:33.239 --> 01:25:35.319

the GDP actually doubled.

1957

01:25:35.600 --> 01:25:38.159

Ten years later, the UK had entered
an era of oil and natural gas

1958

01:25:38.159 --> 01:25:40.319

and its economy quadrupled.

1959

01:25:43.079 --> 01:25:45.760
The UK used oil and natural gas,
cleaner natural energy sources,

1960
01:25:45.760 --> 01:25:47.920
especially natural gas to replace coal

1961
01:25:47.920 --> 01:25:50.479
and clear their skies.

1962
01:25:50.479 --> 01:25:51.079
Interestingly,

1963
01:25:51.079 --> 01:25:55.680
when we were in London this time looking
for historical data related to coal pollution,

1964
01:25:55.680 --> 01:26:01.840
the best, most thorough, and most
authoritative source we found was this.

1965
01:26:01.840 --> 01:26:04.920
This film was produced by a natural gas company.

1966
01:26:04.920 --> 01:26:06.079
Its name is very simple:

1967
01:26:06.079 --> 01:26:08.880
"Guilty Chimneys".

1968
01:26:08.880 --> 01:26:11.760
Natural gas relied on competition
to quickly gain market share

1969
01:26:11.760 --> 01:26:13.720
and replace its predecessor.

1970
01:26:13.720 --> 01:26:15.560
UK's Secretary of State for Energy
and Climate Change told me,

1971
01:26:15.560 --> 01:26:19.920

"Do you know where London's economy was when it first started environmental reforms?"

1972

01:26:19.920 --> 01:26:21.920

He said, "The per capita GDP was the same as China's.

1973

01:26:21.920 --> 01:26:26.159

Most importantly for the government, you shouldn't give subsidies to obsolete, backward-thinking,

1974

01:26:26.159 --> 01:26:28.840

polluting, and unprofitable industries.

1975

01:26:28.840 --> 01:26:31.720

You must give new and developing industries opportunities for fair competition.

1976

01:26:31.720 --> 01:26:34.039

If you do, they will pleasantly surprise you."

1977

01:26:34.039 --> 01:26:35.760

London's experience tells us,

1978

01:26:35.760 --> 01:26:39.760

China needs to leave behind coal and embrace oil and natural gas.

1979

01:26:39.760 --> 01:26:42.920

Only then will we have cleaner air.

1980

01:26:42.920 --> 01:26:47.920

The proportion of natural gas in our current global energy structure is rather high,

1981

01:26:47.920 --> 01:26:52.159

about 24% because it's a relatively clean energy source.

1982

01:26:52.159 --> 01:26:54.520

So how much of China's energy structure is natural gas?

1983

01:26:54.520 --> 01:26:57.119

Only 5%.

1984

01:26:57.119 --> 01:26:58.800

Why is it so low?

1985

01:26:58.800 --> 01:27:01.960

I was given this kind of standard explanation my whole life:

1986

01:27:01.960 --> 01:27:09.359

'It's because we're a country rich in coal, poor in oil, and lacking in natural gas.'

1987

01:27:09.359 --> 01:27:10.760

Is that the truth?

1988

01:27:10.760 --> 01:27:11.880

It is.

1989

01:27:11.880 --> 01:27:13.439

But the whole truth?

1990

01:27:13.439 --> 01:27:15.680

I wrote to the Director of the Mineral Resources and Reserves Evaluation Center

1991

01:27:15.680 --> 01:27:16.960

in the Ministry of Land and Resources.

1992

01:27:16.960 --> 01:27:19.319

He sent me back a few figures.

1993

01:27:19.319 --> 01:27:22.560

How much of our natural gas reserves have been proven?

1994

01:27:22.600 --> 01:27:23.920

Only 22%.

1995

01:27:23.920 --> 01:27:27.659

This means that most of our natural gas lies undiscovered,

1996

01:27:27.659 --> 01:27:30.000

hidden beneath us in the deep dark unknown.

1997

01:27:30.000 --> 01:27:31.800

How about our oil reserves?

1998

01:27:34.039 --> 01:27:36.720

38% are proven.

1999

01:27:36.720 --> 01:27:38.920

So among these reserves that have been proven,

2000

01:27:38.920 --> 01:27:40.000

say for example natural gas,

2001

01:27:40.000 --> 01:27:41.600

we discover 900 billion cubic meters every year.

2002

01:27:41.600 --> 01:27:43.760

But how much have we actually extracted?

2003

01:27:43.800 --> 01:27:45.079

100 billion cubic meters.

2004

01:27:45.119 --> 01:27:47.880

We know where to find a large amount of resources,

2005

01:27:47.880 --> 01:27:49.359

but we aren't exploiting them.

2006

01:27:49.359 --> 01:27:50.640

Why is this?

2007

01:27:50.680 --> 01:27:52.640

Director Zhang Dawei wrote me back again.

2008

01:27:52.640 --> 01:27:55.079

It was quite simple, only a few more figures.

2009

01:27:55.119 --> 01:27:59.239

If we look at America, the world's largest natural gas producing country,

2010

01:27:59.279 --> 01:28:02.479

they have 6,300 natural gas and oil companies.

2011

01:28:02.520 --> 01:28:04.399

How many do we have?

2012

01:28:04.399 --> 01:28:05.680

Three.

2013

01:28:05.720 --> 01:28:08.479

And 70% of them fall under one company:

2014

01:28:08.479 --> 01:28:09.720

Sinopec

2015

01:28:09.720 --> 01:28:12.000

America has 160 natural gas pipeline companies.

2016

01:28:12.039 --> 01:28:13.439

How many do we have?

2017

01:28:13.479 --> 01:28:14.640

Three.

2018

01:28:14.680 --> 01:28:18.119

And 70% of them fall under one company:

2019

01:28:18.119 --> 01:28:19.239

Sinopec

2020

01:28:19.279 --> 01:28:20.520

This was his solution.

2021

01:28:20.520 --> 01:28:22.159

"If we open up the market

2022

01:28:22.159 --> 01:28:24.279

our natural gas production can double every year.

2023

01:28:24.279 --> 01:28:27.479

Our number of proven reserves
can also double every year."

2024

01:28:27.560 --> 01:28:30.640

Why have we been so slow to join the oil and gas age?

2025

01:28:30.640 --> 01:28:33.000

Why can't we produce more natural gas?

2026

01:28:33.000 --> 01:28:35.079

The petrochemical industry isn't open.

2027

01:28:35.079 --> 01:28:39.000

Every sector of the industry is basically a monopoly.

2028

01:28:39.000 --> 01:28:41.199

It's impossible for a monopoly to innovate.

2029

01:28:41.199 --> 01:28:43.319

Companies outside of the industry can't get in.

2030

01:28:43.319 --> 01:28:44.479

It's like an only child.

2031

01:28:44.479 --> 01:28:45.520

The toys are all his.

2032

01:28:45.520 --> 01:28:47.239

He can do with them as he pleases,

2033

01:28:47.239 --> 01:28:48.119

throw them around how he wants.

2034

01:28:48.119 --> 01:28:49.600

You just have to listen to whatever they say.

2035

01:28:50.800 --> 01:28:53.520

The oil business is a matter of national security.

2036

01:28:53.520 --> 01:28:55.640

If it's not run properly,
the results could be disastrous.

2037

01:28:56.039 --> 01:28:58.119

It depends on how you understand energy security.

2038

01:28:58.119 --> 01:29:00.760

Well, energy security is really important.

2039

01:29:00.760 --> 01:29:04.760

But the new technologies that we can work
on together are answering that problem.

2040

01:29:04.760 --> 01:29:05.960

As long as there is competition,

2041

01:29:05.960 --> 01:29:09.000

the industry will do everything possible
to innovate and transform itself.

2042

01:29:09.000 --> 01:29:10.439

You may be interested to know

2043

01:29:10.439 --> 01:29:13.800

that the company that controls the electricity
distribution around this city, London,

2044

01:29:13.800 --> 01:29:15.680

is Chinese owned.

2045

01:29:15.680 --> 01:29:17.560

We must lower the cost of energy.

2046

01:29:17.560 --> 01:29:18.960

Only then will there be competitiveness.

2047

01:29:18.960 --> 01:29:21.760

I think that by being open,

2048

01:29:21.760 --> 01:29:24.520

you share ideas, you innovate,
you get the best from the world.

2049

01:29:24.520 --> 01:29:28.319

What is the key to solving China's pollution?

2050

01:29:28.319 --> 01:29:29.920

Reform the energy system.

2051

01:29:32.319 --> 01:29:35.800

I had never before encountered China's energy
issues until I made this documentary.

2052

01:29:35.800 --> 01:29:38.399

I still only have a very simple understanding of them.

2053

01:29:38.399 --> 01:29:40.520

China's reform and opening up to the world
was not like I originally imagined,

2054

01:29:40.560 --> 01:29:42.319

like a chick hatching from its shell,

2055

01:29:42.319 --> 01:29:45.279

a complete, living being once it has emerged.

2056

01:29:45.279 --> 01:29:47.039

It's more like a cicada molting,

2057

01:29:47.039 --> 01:29:50.239

little by little coming out of its original skin.

2058

01:29:50.239 --> 01:29:53.800

And energy is the last remaining part inside the skin.

2059

01:29:53.800 --> 01:29:57.439

It has always been considered important
to national security and economic security,

2060

01:29:57.439 --> 01:29:59.359

so it has never been considered a commodity.

2061

01:29:59.359 --> 01:30:03.760

It has never been governed by
the lass of market economics.

2062

01:30:03.760 --> 01:30:07.880

But the skin itself is also paying a price.

2063

01:30:07.880 --> 01:30:11.000

This is a chart of our energy system...

2064

01:30:11.000 --> 01:30:14.319

and the past two years of corruption connected to it.

2065

01:30:14.319 --> 01:30:16.439

Energy is a sector with a high rate of corruption.

2066

01:30:16.439 --> 01:30:20.800

When Liu Tienan, former Director of the National Energy
Administration, was on trial, he said:

2067

01:30:20.800 --> 01:30:24.739

"In order to contain widespread corruption, the
authority that once belonged to the market

2068

01:30:24.739 --> 01:30:27.680

must be given back to the market."

2069

01:30:27.680 --> 01:30:30.199

So in June 2014,

2070

01:30:30.199 --> 01:30:35.880

China's national energy security strategy
specified that "energy is a commodity."

2071

01:30:35.880 --> 01:30:38.720

"We must construct an effective
market structure and system.

2072

01:30:38.720 --> 01:30:41.840

In addition, we must change the
way government supervises energy."

2073

01:30:41.840 --> 01:30:47.060

But while we wait for the country to
build and improve a huge energy system,

2074

01:30:47.060 --> 01:30:48.739

what can we actually do?

2075

01:30:48.739 --> 01:30:53.060

Even the world's most powerful
government can't solve pollution on its own.

2076

01:30:53.060 --> 01:30:56.579

It must rely on ordinary citizens like you and me.

2077

01:30:56.579 --> 01:30:57.939

On our choices.

2078

01:30:57.939 --> 01:31:00.899

On our determination.

2079

01:31:00.899 --> 01:31:03.699

In 2003 when I was reporting on SARS,

2080

01:31:03.699 --> 01:31:05.939

the most valuable lesson I learned was that

2081

01:31:05.939 --> 01:31:11.180

information transparency is
necessary for public participation.

2082

01:31:11.180 --> 01:31:13.380

For the past three years,

2083

01:31:13.380 --> 01:31:16.340

while the Chinese government has
provided the public with air quality readings,

2084

01:31:16.340 --> 01:31:21.899

they've also established the world's largest online
monitoring system to watch polluters.

2085

01:31:21.899 --> 01:31:25.659
What we must do is put this data to good
use and not waste the money spent on it.

2086
01:31:25.659 --> 01:31:29.899
Expose it and let everyone see.

2087
01:31:29.899 --> 01:31:31.260
This is a mobile app.

2088
01:31:31.260 --> 01:31:32.539
After downloading it,

2089
01:31:32.539 --> 01:31:34.579
you can see on your phone

2090
01:31:34.579 --> 01:31:38.579
any business emitting pollutants
within 5 km of your location.

2091
01:31:38.579 --> 01:31:42.220
These red circles all show enterprises currently
exceeding emissions standards.

2092
01:31:42.220 --> 01:31:47.180
China's 6,000 key enterprises emit
65% of the country's waste fumes.

2093
01:31:47.180 --> 01:31:49.140
You can report them to
environmental protection agencies

2094
01:31:49.140 --> 01:31:51.100
or publish their details on Weibo.

2095
01:31:51.100 --> 01:31:54.939
All of these circles with blue marks are companies
that have promised to take corrective action

2096
01:31:54.939 --> 01:31:56.939
after citizens reported them.

2097

01:31:56.939 --> 01:32:00.899
Regrettably of course, not every place
will simply publish this data.

2098
01:32:00.899 --> 01:32:02.460
Then what?

2099
01:32:02.460 --> 01:32:08.619
Last year, I attended a forum where local environmental
protection legislation was drafted for the first time.

2100
01:32:08.619 --> 01:32:10.859
I heard many disputes while there,

2101
01:32:10.859 --> 01:32:16.500
but the main one focused around whether to force
key enterprises to disclose their information.

2102
01:32:16.500 --> 01:32:20.460
In the end, Hubei Province developed the first ever
regulations decided with public participation.

2103
01:32:20.460 --> 01:32:24.180
They stipulated that key polluting enterprises
must publicize their information.

2104
01:32:24.180 --> 01:32:25.340
If they don't,

2105
01:32:25.340 --> 01:32:28.939
citizens can file lawsuits and demand fines.

2106
01:32:28.939 --> 01:32:32.100
Polluters can be fined as much as
100,000 RMB (\$16,000) per day.

2107
01:32:32.100 --> 01:32:33.380
But,

2108
01:32:33.380 --> 01:32:35.300
who would actually do these things?

2109

01:32:35.300 --> 01:32:39.699
Only 1% of environmental disputes
in China reach the courts.

2110
01:32:39.699 --> 01:32:40.939
Why so few?

2111
01:32:40.939 --> 01:32:48.779
Can you guess how many non-profits in China
had the ability to file lawsuits before this year?

2112
01:32:48.779 --> 01:32:50.300
Not even one.

2113
01:32:50.300 --> 01:32:52.699
That's because the current
Civil Procedure Law states that

2114
01:32:52.699 --> 01:32:55.659
"only relevant organizations may
institute actions in court."

2115
01:32:55.859 --> 01:32:58.060
As for what constitutes a relevant organization,

2116
01:32:58.060 --> 01:32:59.420
nobody knows.

2117
01:32:59.420 --> 01:33:00.779
However starting January 1st, 2015,

2118
01:33:00.779 --> 01:33:02.619
the new environmental protection law stipulates

2119
01:33:02.619 --> 01:33:05.140
as long as your organization has at
least five years experience in environmental

2120
01:33:05.140 --> 01:33:06.420
public interest activities
and no law violation records,

2121

01:33:06.420 --> 01:33:09.340
you have the ability to file litigation.

2122
01:33:09.340 --> 01:33:10.220
Currently,

2123
01:33:10.220 --> 01:33:14.539
people from more than 700 environmental protection
organizations are testing out the law.

2124
01:33:14.539 --> 01:33:15.619
They put forward a slogan:

2125
01:33:15.619 --> 01:33:19.579
"Does the new law have what it takes?
We're trying it out right now!"

2126
01:33:19.979 --> 01:33:21.220
For average citizens like us

2127
01:33:21.220 --> 01:33:24.180
who don't have the time to join
environmental protection organizations,

2128
01:33:24.180 --> 01:33:25.979
what else can we do?

2129
01:33:25.979 --> 01:33:29.500
We worked together with Friends of Nature
to make this short animation.

2130
01:33:29.899 --> 01:33:32.140
"I'll Do My Part To Fight The Smog"

2131
01:33:32.500 --> 01:33:34.699
If you're traveling within 5 km,

2132
01:33:34.699 --> 01:33:37.579
try to take public transportation,
ride a bike, or carpool.

2133
01:33:37.579 --> 01:33:40.619

If you drive, don't keep the engine
idle for more than 30 seconds.

2134

01:33:41.020 --> 01:33:43.340

If you see a diesel truck emitting black exhaust,

2135

01:33:43.340 --> 01:33:46.140

try calling 12369 to report it.

2136

01:33:46.140 --> 01:33:49.220

The "black tails" behind diesel trucks
contain large amounts of PM2.5

2137

01:33:49.220 --> 01:33:50.760

and harm public health.

2138

01:33:50.939 --> 01:33:53.140

If you see a restaurant spewing out black smoke,

2139

01:33:53.140 --> 01:33:57.739

try asking them to install a filtering device
or leave them a negative rating online.

2140

01:33:57.739 --> 01:34:00.220

If you see dust flying from uncovered
mounds of dirt at construction sites,

2141

01:34:00.260 --> 01:34:02.220

or suspect a gas station is leaking oil and gas,

2142

01:34:02.220 --> 01:34:04.260

try calling 12369.

2143

01:34:04.260 --> 01:34:06.020

If you burn coal at home,

2144

01:34:06.020 --> 01:34:07.659

if you can afford it,

2145

01:34:07.659 --> 01:34:09.380

try to the best of your ability
to avoid poor quality coal.

2146

01:34:09.380 --> 01:34:12.380

Ask your mother to clean the cooking range to keep your family healthy.

2147

01:34:12.939 --> 01:34:16.020

You can also take photos to help locate sources of industrial pollution,

2148

01:34:16.020 --> 01:34:17.739

supervise and report illegal activity,

2149

01:34:17.739 --> 01:34:20.500

and Weibo your local environmental bureau

2150

01:34:20.500 --> 01:34:24.220

Pay attention to lists of polluters and boycott their products.

2151

01:34:24.739 --> 01:34:27.260

When environmental policies and regulations are being drafted or amended,

2152

01:34:27.260 --> 01:34:29.260

take part in public commenting

2153

01:34:29.260 --> 01:34:30.640

and get your voice heard.

2154

01:34:30.899 --> 01:34:33.340

Through a little thought and care, our skies will begin to clear.

2155

01:34:36.460 --> 01:34:39.460

Before when I walked past the uncovered construction site near my home,

2156

01:34:39.460 --> 01:34:41.380

I always just covered my nose and walked by.

2157

01:34:41.380 --> 01:34:48.020

But now that I know at least 15% of

Beijing's PM2.5 comes from flying dust,

2158

01:34:48.020 --> 01:34:49.260

I decided to speak up.

2159

01:34:58.680 --> 01:34:59.960

We live nearby.

2160

01:34:59.960 --> 01:35:02.359

Why isn't that dirt covered?

2161

01:35:02.359 --> 01:35:03.520

Go ask our boss.

2162

01:35:03.520 --> 01:35:05.960

Where is he?

2163

01:35:05.960 --> 01:35:06.800

Over there.

2164

01:35:10.119 --> 01:35:12.760

You haven't covered that big
pile of dirt next to the road.

2165

01:35:12.760 --> 01:35:14.039

The wind kicks up dust everywhere.

2166

01:35:14.039 --> 01:35:15.960

I know, I know. That's our mistake.

2167

01:35:15.960 --> 01:35:17.000

Then when can you cover it?

2168

01:35:17.000 --> 01:35:17.720

Right away.

2169

01:35:17.720 --> 01:35:18.479

Ok.

2170

01:35:18.479 --> 01:35:19.439

I'm so sorry.

2171

01:35:28.380 --> 01:35:31.819

From beginning to end, the
process took less than 5 minutes.

2172

01:35:31.819 --> 01:35:33.500

As I was leaving,

2173

01:35:33.500 --> 01:35:35.819

the worker who had me find his boss said,

2174

01:35:35.819 --> 01:35:37.579

"You know why my boss was afraid of you?"

2175

01:35:37.579 --> 01:35:39.619

He pointed at the cellphone in my hand.

2176

01:35:39.619 --> 01:35:42.460

"He was afraid you'd expose him."

2177

01:35:42.460 --> 01:35:43.939

There's a restaurant downstairs from my home

2178

01:35:43.939 --> 01:35:45.420

making meat pies.

2179

01:35:45.420 --> 01:35:47.380

During mealtimes,

2180

01:35:47.380 --> 01:35:50.739

the entire building and even my clothes stink of smoke.

2181

01:35:50.739 --> 01:35:52.100

I didn't think this was a problem before.

2182

01:35:52.100 --> 01:35:53.819

Aren't all Chinese restaurants
across the world like that?

2183

01:35:53.819 --> 01:36:01.500

But now I know the food industry accounts for

at least 6% of Beijing's PM2.5 pollution.

2184

01:36:01.500 --> 01:36:04.340

And Beijing is home to 12% of
China's food and beverage industry.

2185

01:36:04.340 --> 01:36:05.659

For such a huge industry,

2186

01:36:05.659 --> 01:36:07.699

I thought there was nothing
that could be done about it.

2187

01:36:07.699 --> 01:36:09.460

But then when I went to London

2188

01:36:09.460 --> 01:36:10.779

and ate in a Chinese restaurant,

2189

01:36:10.779 --> 01:36:12.100

I realized there was no smell.

2190

01:36:12.100 --> 01:36:12.939

Why?

2191

01:36:12.939 --> 01:36:17.819

The boss took me up to the roof and showed me this.

2192

01:36:17.819 --> 01:36:20.260

It's called an "electrostatic air purifier".

2193

01:36:20.260 --> 01:36:22.300

The London city government requires them to install it

2194

01:36:22.300 --> 01:36:24.979

and it's regularly inspected.

2195

01:36:24.979 --> 01:36:27.699

I was thinking these things must be pretty high-tech,

2196

01:36:27.699 --> 01:36:29.140

but when I asked about them back in Beijing,

2197

01:36:29.140 --> 01:36:32.420

I discovered not only does Beijing also have them, the city actually requires restaurants to install them.

2198

01:36:32.420 --> 01:36:34.500

I called 12369 to report the restaurant near my home,

2199

01:36:34.500 --> 01:36:36.619

and one week later,

2200

01:36:36.619 --> 01:36:38.619

this was delivered.

2201

01:36:46.260 --> 01:36:48.579

Installation took less than a half hour.

2202

01:36:48.579 --> 01:36:51.739

While I was shooting the video, the boss came over and said,

2203

01:36:51.739 --> 01:36:54.500

"Thank you for your supervision as a citizen.

2204

01:36:54.500 --> 01:36:57.100

Come by our restaurant as often as you'd like."

2205

01:36:57.100 --> 01:36:59.640

This year our office lunches have been nothing but meat pies.

2206

01:37:01.979 --> 01:37:04.939

Sometimes when I'm walking by the gas station nearby my home, there's one downstairs,

2207

01:37:04.939 --> 01:37:08.180

I can smell a really strong odor of gasoline.

2208

01:37:08.180 --> 01:37:10.939

But, I had always thought every gas station in the world smelled like that

2209

01:37:10.939 --> 01:37:13.300

until I went to America.

2210

01:37:13.300 --> 01:37:15.739

I saw this little thing on their gas pump nozzle

2211

01:37:15.739 --> 01:37:18.539

It's called a vapor recovery device.

2212

01:37:18.539 --> 01:37:20.500

Again, I thought these must be high-tech,

2213

01:37:20.500 --> 01:37:22.859

but when I returned to Beijing,

I found out we've had them for awhile.

2214

01:37:22.859 --> 01:37:24.659

They've been required since 2008,

2215

01:37:24.659 --> 01:37:26.779

but some gas stations don't maintain them properly

2216

01:37:26.779 --> 01:37:29.899

which then emits gasoline vapor into the atmosphere.

2217

01:37:29.899 --> 01:37:33.060

Once again, I called 12369.

2218

01:37:36.760 --> 01:37:38.000

Looking at it in the light,

2219

01:37:38.000 --> 01:37:39.479

there's a huge amount coming out.

2220

01:37:39.479 --> 01:37:40.760

There's definitely a problem.

2221

01:37:46.239 --> 01:37:49.000

It's not normal to smell this

kind of odor when you're filling up.

2222

01:37:49.000 --> 01:37:50.279

See this gas vapor?

2223

01:37:55.079 --> 01:37:56.000

It shouldn't be coming out from here.

2224

01:37:56.000 --> 01:37:56.399

Right.

2225

01:37:57.840 --> 01:37:58.640

Oh, it's wet.

2226

01:37:58.640 --> 01:38:00.039

That means a lot of gasoline is leaking from here?

2227

01:38:00.039 --> 01:38:01.880

Right, and the vapor isn't being recovered.

2228

01:38:01.880 --> 01:38:05.239

Some of the vapor escapes and goes into the atmosphere.

2229

01:38:05.680 --> 01:38:06.199

We'll take the pump out of service and fix it right away.

2230

01:38:06.199 --> 01:38:07.199

We'll take the pump out of service and fix it right away.

2231

01:38:07.319 --> 01:38:08.920

This requires all gas stations to have an annual compulsory inspection of their vapor recovery devices.

2232

01:38:08.920 --> 01:38:12.840

This requires all gas stations to have an annual compulsory inspection of their vapor recovery devices.

2233

01:38:13.640 --> 01:38:15.600

You can call the environmental complaint hotline at 12369.

2234

01:38:16.079 --> 01:38:17.439
And you'll definitely check it out?

2235

01:38:17.439 --> 01:38:18.680
Absolutely.

2236

01:38:18.680 --> 01:38:19.680
100% of the time.

2237

01:38:21.300 --> 01:38:23.300
He promised they come 100% of the time.

2238

01:38:23.300 --> 01:38:24.579
I'm not sure if they really do,

2239

01:38:24.579 --> 01:38:26.460
but putting up the number right here

2240

01:38:26.460 --> 01:38:27.779
can be considered a test.

2241

01:38:27.779 --> 01:38:29.300
We must remember this number:

2242

01:38:29.300 --> 01:38:30.819
12369

2243

01:38:30.819 --> 01:38:31.859
If you don't call,

2244

01:38:31.859 --> 01:38:34.060
it will always remain just another number.

2245

01:38:34.060 --> 01:38:36.380
I've said before that this past year
has been a difficult one for me.

2246

01:38:36.380 --> 01:38:38.859
It always felt like I was sort
of drifting from day to day.

2247

01:38:38.859 --> 01:38:39.500
Really.

2248

01:38:40.579 --> 01:38:43.260
Whenever the pollution hit,
I didn't know where I'd be tomorrow

2249

01:38:43.260 --> 01:38:44.619
or where I'd be in the future.

2250

01:38:44.619 --> 01:38:45.619
However,

2251

01:38:45.619 --> 01:38:50.020
in that moment when that restaurant
owner successfully installed the air purifier,

2252

01:38:50.020 --> 01:38:52.460
I suddenly felt like my feet were back on solid ground.

2253

01:38:52.460 --> 01:38:54.619
It's a hard feeling to describe.

2254

01:38:54.619 --> 01:38:59.420
You know full well that it's
effect on air pollution is next to nothing,

2255

01:38:59.420 --> 01:39:03.060
but the fact that a person
knows they've made a tiny contribution,

2256

01:39:03.060 --> 01:39:05.260
that they've actually made things a little better,

2257

01:39:05.260 --> 01:39:07.180
can make them feel more at ease.

2258

01:39:07.180 --> 01:39:11.300
So when you turn around and see
this war between mankind and pollution,

2259

01:39:11.300 --> 01:39:13.060
this is what history will have brought about:

2260
01:39:13.060 --> 01:39:15.300
Millions upon millions of ordinary citizens

2261
01:39:15.300 --> 01:39:17.979
one day will stand up and shout, "No!"

2262
01:39:17.979 --> 01:39:19.119
"I'm not satisfied!"

2263
01:39:19.819 --> 01:39:21.340
"I will no longer wait!"

2264
01:39:21.340 --> 01:39:22.579
"I will not sit back!"

2265
01:39:22.579 --> 01:39:24.460
"I will stand up and do something!"

2266
01:39:24.460 --> 01:39:26.979
"I will do something in this moment!"

2267
01:39:26.979 --> 01:39:28.180
"Right now!"

2268
01:39:28.180 --> 01:39:30.100
"Right here!"

2269
01:39:30.100 --> 01:39:31.100
"I am going to do it!"

2270
01:39:38.199 --> 01:39:42.079
Unless we do bring these chemicals under better
control, we are certainly headed for disaster.

2271
01:39:42.079 --> 01:39:43.479
Unless we do bring these chemicals under better
control, we are certainly headed for disaster.

2272

01:39:44.359 --> 01:39:47.680
Minamata Disease Outbreak in Japan 1953-1956

2273
01:40:07.479 --> 01:40:10.319
This whole system that we call home.

2274
01:40:10.319 --> 01:40:19.920
Asthma sufferers in Tokyo are suing Japanese automakers
due to harm caused by automobile exhaust.

2275
01:40:19.920 --> 01:40:23.079
We have the right to know, the right to
participate, and the right to justice.

2276
01:40:23.079 --> 01:40:24.319
We must unite as one

2277
01:40:24.319 --> 01:40:25.560
and make the decision together

2278
01:40:25.560 --> 01:40:28.479
that our generation will take a greener path.

2279
01:40:28.479 --> 01:40:30.960
If you don't know how to fix it,

2280
01:40:30.960 --> 01:40:33.359
please stop breaking it.

2281
01:40:33.359 --> 01:40:36.279
You grown ups say you love us.

2282
01:40:36.279 --> 01:40:38.880
Please, make your action.

2283
01:40:38.880 --> 01:40:40.640
And for me, it is absolutely my
responsibility to do whatever it takes

2284
01:40:40.640 --> 01:40:45.239
And for me, it is absolutely my
responsibility to do whatever it takes

2285

01:40:45.239 --> 01:40:48.220
to protect my child.

2286

01:40:54.260 --> 01:40:56.539
When the smog gets really bad,

2287

01:40:56.539 --> 01:40:58.420
there's at least one thing we can all do.

2288

01:41:00.260 --> 01:41:01.899
And that's to protect yourself

2289

01:41:01.899 --> 01:41:03.460
and those you love.

2290

01:41:03.460 --> 01:41:07.020
As I drew this little teddy bear,

2291

01:41:07.020 --> 01:41:11.899
I recalled the fear I had of losing my daughter

2292

01:41:11.899 --> 01:41:14.539
as well as the wish I had of protecting her.

2293

01:41:14.539 --> 01:41:21.699
I hope all mothers in this
world never have that feeling.

2294

01:41:21.699 --> 01:41:23.460
She's older now.

2295

01:41:23.460 --> 01:41:25.899
She's healthy and fully recovered.

2296

01:41:25.899 --> 01:41:28.460
She's very strong and energetic,

2297

01:41:28.460 --> 01:41:30.140
and still as chubby as before.

2298

01:41:30.140 --> 01:41:33.739

She loves the outdoors and little animals.

2299

01:41:33.739 --> 01:41:36.340

But there are many times I can't bring her outside.

2300

01:41:36.340 --> 01:41:40.060

So she's been raising her
own snail in a small flower pot.

2301

01:41:40.060 --> 01:41:41.260

Every morning when she wakes up,

2302

01:41:41.260 --> 01:41:44.180

she'll run over to the flower
pot and blow on her snail.

2303

01:41:44.180 --> 01:41:47.220

She thinks this will help it grow.

2304

01:41:47.220 --> 01:41:50.140

She loves this world so much.

2305

01:41:50.739 --> 01:41:53.220

Right now thousands upon thousands
of children are about to enter this world,

2306

01:41:53.220 --> 01:41:56.539

or are taking their first breaths.

2307

01:41:56.539 --> 01:41:58.619

These rivers...

2308

01:41:58.619 --> 01:42:00.140

The sky...

2309

01:42:00.140 --> 01:42:01.899

The earth...

2310

01:42:01.899 --> 01:42:05.180

all should belong to them.

2311

01:42:05.180 --> 01:42:08.579

We have no right to consume without self-control.

2312

01:42:08.579 --> 01:42:12.500

We have no right to complain without building anew.

2313

01:42:12.500 --> 01:42:14.300

But we do have the responsibility to prove to them

2314

01:42:14.300 --> 01:42:16.260

that a world illuminated by energy

2315

01:42:16.260 --> 01:42:18.380

can, at the same time, be clean and beautiful.

2316

01:42:22.100 --> 01:42:24.779

Every time I look into the night sky

2317

01:42:24.779 --> 01:42:28.220

and see this celestial body of ours spinning so lonely,

2318

01:42:28.220 --> 01:42:33.180

I feel a kind of indescribable attachment and warmth.

2319

01:42:33.180 --> 01:42:34.899

There will come a day

2320

01:42:34.899 --> 01:42:37.500

when I will leave this world.

2321

01:42:37.500 --> 01:42:40.380

But my child will continue among the living,

2322

01:42:40.380 --> 01:42:44.100

and this world will still be of importance to me.

2323

01:42:44.100 --> 01:42:46.539

And so I gaze upon it,

2324

01:42:46.539 --> 01:42:49.300
just as I gaze upon you.

2325
01:42:49.300 --> 01:42:52.340
And so I protect it,

2326
01:42:52.340 --> 01:42:54.699
just as I protect you.